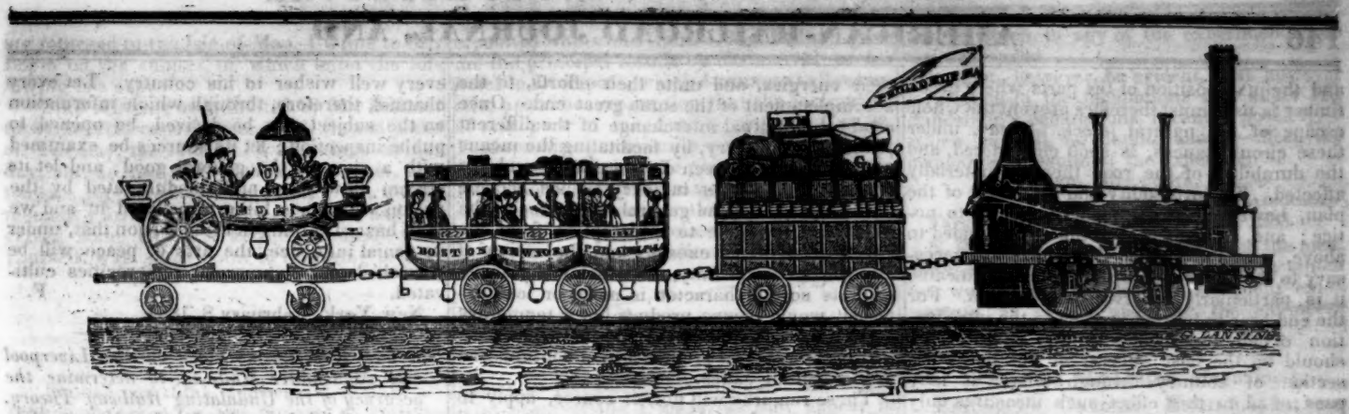

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, MARCH 15, 1834.

To Correspondents.—Our friends will not, we trust, withhold their valuable communications, because they are sometimes delayed. They must recollect that the times are 'out of joint,' and that we have other duties to attend to just now.

We are gratified to learn that the Ithaca and Owego Railroad will probably be in use by the middle of April, through its *whole line*.

Engineer's Manual.—We publish the following extract from the preface of a forthcoming work, believing that in so doing we shall confer a favor on many of our readers. The author of the work is a practical engineer, engaged upon one of our western railroads, and has often furnished us with valuable communications for the Journal, signed "V. D. G." We hope to be able to make further extracts from the work itself, by which those most interested in it may be able to judge of its utility to the profession.

In presenting the present little work to the notice of the public, the author is actuated with the hope of contributing in a small degree to the collection of such principles as are daily required in locating railroad curvatures with ease, accuracy, and despatch. The author has not possessed an opportunity of ascertaining extensively what may be the various methods of calculation at present resorted to by scientific and skillful engineers generally, in determining the relative positions of given points in the different curves and tangent lines which frequently come under consideration in the field; and the principal formulas which are here offered to the public, embracing these cases, are therefore *such only* as have been used with advantage by himself. The only methods of calculation which he knows to be *now in use by others*, and which are sufficiently commodious for purposes in the field, are of an approximative kind; and under circumstances which often occur, the use of those approximative results is attended with inconvenience and delay. It is therefore hoped that the different formulæ which will be here found investigated and arranged for use will be acceptable to those who may not be in possession of more convenient methods of computation, which are sufficiently rigorous to pass a *long curve* through a given point at the first attempt.

The second part of this Manual is devoted to the methods of constructing the elliptical curve. It is well known that the true curve of an ellipsis is produced by an oblique section of a cylindrical surface, whether that surface be circular or elliptical; and hence it is that the true figure of an ellipsis should be traced with precision in the construction of skew bridges, having either circular or elliptical arches. Other cases in the department of a civil engineer might be mentioned, in which a perfect ellipsis is required; and there is no method available in practice hitherto published, which is known to the author, for constructing an oval, consisting of given circular arcs, and approaching with sufficient precision to the curve of an ellipsis.

A table of natural sines and cosines is to the engineer almost of daily use. Such a table is therefore subjoined to this work. It is also thought desirable to add a table of the square and square roots of numbers; which not only very frequently saves labor, but will also be the means of diminishing the liability to err in numerical calculations. Indeed, those two tables, or others of a similar kind, will be considered indispensable to the skillful prosecution of all field operations, by those *who know* the facilities which may be derived from them.

A speed of 40 miles an hour with a light load, has been obtained upon the Manchester railway; and Mr. G. Stephenson, the engineer, has stated his opinion that an engine might be constructed to run 100 miles within the hour, although he acknowledges that "at that rapidity of motion the resistance of the atmosphere would be very considerable." Engines are now made with eight times the power of the Rocket, yet with little more weight resting on each rail, the load being equally divided upon six wheels, and the machinery placed in a more advantageous situation than formerly. The tubes of the boiler are made smaller and more numerous, and of brass instead of copper. The last engine put on the railway ran 23,000 miles with the most trivial repairs, taking every day four or five journeys of thirty miles each.

The following communication was received in due time, but delayed by a press of other matter previously in hand.—[Ed. R. R. J.]

Internal Improvements, No. IV. By F. To the Editor of the American Railroad Journal and Advocate of Internal Improvements.

Sir,—Before taking leave of the subject of turnpike roads, we must intreat your further indulgence for a few moments, to make a brief reply and offer a few remarks in relation to an objection that has been frequently advanced against the indiscriminate adoption of M'Adam's system of construction. It may be true, as has been stated, that there are spots highly favored in themselves as to natural advantages,—rich in every mineral and agricultural resource—but at the same time so sequestered and shut out beyond the pale of intercourse with more populous parts of the country, as to render them unavailable, except to a very limited extent. Capitalists, however, cannot be induced to embark in projects that offer but little promise of profit, and that little uncertain and remote. They require something more tangible, and will not seek in distant quarters for that which they may have without seeking at home; and it therefore stands to reason, that so long as safer and more advantageous investments are to be met with here by greater facilities, such places, however strong their claim to notice may be, must of necessity remain in a state of crude, uncultivated nature, or be content with such modifications of approved plans as may be in some degree commensurate with their available means.

We are no friends to the forcing system, and would at any time use our best efforts to discourage any project having a tendency to that end; but, we still think that some substitute might be safely recommended to meet such cases as those alluded to above, without in any manner compromising the great end of Internal Improvements, which is to bring out to the best advantage the resources of a country by any means that the nature and extent of those resources will justify. If a substitute be adopted, it should combine in its qualifications a hard and even surface, with great cheapness of construction. These are qualities indispensably necessary to the furtherance of the end in view—and as they seem to be embodied in a plan recently proposed by an engineer of some eminence in Ohio, we shall content ourselves in referring to a former number of this journal for a full explanation of its principles, by observing that much depends upon the quality and seasoning of the timber used in the formation of the ways. Evaporation principally takes place in the direction of the fibres of the wood;

and the juxtaposition of the parts where green timber is used must therefore prevent the whole escape of the natural juices. Decay, under these circumstances, is soon engendered, and the durability of the road thereby materially affected. The originality and real merit of the plan, however, recommend it warmly to notice; and, as applicable to the cases alluded to above, where preliminary measures are necessary to the introduction of more perfect means, it is particularly deserving of attention. For the end ever to be kept in view in the introduction of all improvements and innovations, should be the best interest of the particular section of country through which it may pass; and to this effect such measures only should be adopted as a calm and deliberate examination of its condition, with a careful investigation of its capacity of improvement, may dictate as most conducive to the speedy development of its natural resources. It will be admitted that every district possesses certain capabilities, which are only prevented from being brought into action by its distance from some sea-port town; and that every place having a tendency to increase its facilities of intercourse therewith must exercise a corresponding influence on the improvement of its condition. It is still, however, of vital importance to the early and successful establishment of prosperity, that the infantine exertions of such district be carefully fostered and guarded against all undue encroachments—thus, an avenue being laid open, no further apprehension need be entertained. A change of condition will soon be manifested by increased activity and prosperity; and its necessities will thenceforth be promptly met by additional facilities: for, as the motive that first incites to action stimulates with greater force to perseverance, so the enjoyment of increased prosperity animates to still greater exertions for its consummation.

As civilization attains a higher degree of perfection, and commerce becomes more generally extended, the luxuries and comforts of life demand the adoption of some new mode of communication more suitable to the advanced state of the arts and manufactures. Railroads and canals thence took their rise; and all countries to which ancient history directs our attention, seem to have availed of them according as necessity has dictated or circumstances justified. Indeed, it is a remarkable fact, that the only countries which have never emerged from their primitive state of barbarism and ignorance are those which are destitute of the means of inland navigation. This is strikingly exemplified in the inland parts of Africa, and in that part of Asia lying north of the Euxine and Caspian—the ancient Scythia and the modern Tartary and Siberia. On the other hand, wherever these means have been enjoyed, there civilization has prospered, and the arts and sciences have flourished. Thus, Egypt was the birthplace of agriculture and manufactures—the banks of the Nile were the sites of its towns and villages, which, together with those of the ancient Indians and Chinese, derived their prosperous condition and immense wealth almost exclusively from their inland navigation.

The experience of past ages therefore proves to us that every means, having for its end the promotion of internal commerce, is deserving the consideration of all civilized communities, and particularly of one like our own, in the enjoyment of every variety of soil and clime, and capable of every species of production, either of agriculture or manufactures. The system of society is so complex in its character, and its various orders so mutually interwoven by natural causes, that a good effect cannot be produced in any one part without exercising a corresponding happy influence over the other; generating thereby a mutual dependance among all classes—the high, the low—the rich, the poor—the agriculturist, the manufacturer. The interests of each converge towards the same point; and it should, therefore, be the duty of each, collectively and individually, to concentrate their energies, and unite their efforts, to the accomplishment of the same great end. Once establish a mutual interchange of the different products of industry, by facilitating the means of intercourse between distant places, and the very objects of that industry thence become more varied, and the general commerce of the country less liable to interruption from the effects of artificial causes; and the action of any particular calamity, to which every society in its social character is more or less exposed, would thence produce but a temporary and partial evil, and would find its own correction in the reaction produced by a continuation of the exciting cause.

These remarks will not, of course, apply to a country exclusively possessing agricultural industry. In such country, the influence of foreign competition on its peculiar staples exercises a direct tendency to stimulate production to an extent that is calculated to overstock and glut the market. The price of the article thence becomes insufficient to meet the expense of raising it; and the cultivator, as a consequence, unless speedily relieved by the introduction either of new staples or new markets of consumption, must sooner or later sink under the pressure, and be reduced to the lowest state of poverty. A most deplorable instance of this truth has already been experienced in some of the Southern States of this Union—where the very articles that, for many years, proved a fertile source of revenue to the cultivator, became, not long since, owing to an excessive production, so reduced in value as to be altogether inadequate to the task of maintaining him above actual want.

But, however palpable the causes by which these effects are produced may appear, it is still a prolific source of speculation among philanthropists how far the rapid extension of manufactures, through the medium of machinery and internal improvements, is advantageous to a country as regards it moral and social condition. It has been observed, and cannot be denied, that every improvement in machinery, by which manual labor is materially lessened, is calculated to produce distress with a certain class of the community, by depriving them of their usual means of employment, and obliging them thereby to recommence the world, so to speak, in the adoption of some new vocation. But, at the same time, it must be remembered that the direct tendency of the operation of any improvement of this kind, is to increase the consumption of the product of its labors by lessening its nominal value. A wider field is thus at once opened to enterprise—additional resources made attainable,—and, therefore, while the evil complained of is only temporary, and confined to a limited, a very insignificant, numerical portion of that community, the benefit conferred is permanent and diffused throughout the whole mass of society. Besides, what tends more to elevate the condition of the poor—to exalt and ennoble the character of man—than the encouragement of all such means as will supersede the necessity for application of mere animal force? It is the degrading tendency of his occupation which alone reduces the poor operator to the lowest grade of human depravity—hardens his conscience—and stifles in his breast every natural feeling of moral excellence. Relieve his mind from this sense of degradation, and his ambition will soon take a loftier flight. He will feel a superiority over the brute creation that will elevate him above his former sphere and urge him on to greater efforts. The faculties of mind thus awakened will be thenceforth directed to the accomplishment of those means of luxury and enjoyment that before were only attainable at unceasing toil and labor.

It is unnecessary to pursue this subject further; for it is obvious that every improvement in machinery must be attended by results highly beneficial to the community at large; and internal communications, as a step preliminary to their introduction and application, should engage a large share of attention from every well wisher to his country. Let every channel, therefore, through which information on the subject can be derived, be opened to public inspection; let its sources be examined with a view to the general good; and let its stream flow pure and unadulterated by the poison which has hitherto polluted it, and we then hazard nothing in the assertion that, under its genial influence, the arts of peace will be cherished and commercial reciprocities cultivated.

F.

New-York, February 8, 1834.

The late Experiments made on the Liverpool and Manchester Railway, to determine the accuracy of the Undulating Railway Theory.

[From the London Mechanics' Magazine.]

SIR,—The truth of Mr. Badnall's statements of the experiments on the Sutton inclined plane being of importance to those who have no other means of forming their judgment upon the undulating railway theory, I take the liberty of asking that gentleman, through the medium of your Journal, which contains his account of the trials on the 23d and 24th of September (see No. 530,) how it happens that your printed statement doth vary from the verbal one which he was so polite as to give me at the Star hotel, Liverpool, on the evening of the said 24th, in the presence of Mr. Perkins the engineer, and several other gentlemen? Mr. Badnall read from his note-book, carefully and distinctly, while I wrote down his words (in ink), which, at my request, were repeated by him to prevent mistakes, and I have now the memorandum before me. Mr. Badnall will recollect, that I told him *the same night* that the results did not accord with each other, if the inclination of that part of the Sutton plane, upon which the experiments were tried, was really as great as he had assumed it to be—namely, 1 in 96.

The statement which Mr. Badnall then deliberately gave me was as follows, and refers only to the first, second, and eleventh experiments:

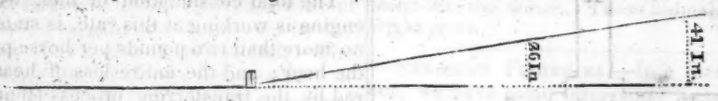
"Weight of the Rocket engine and tender, 6½ tons; wheels 4 feet 8 inches *diameter*. *First.*—Began the ascent (without steam) at the rate of 18 miles an hour (equal to 18 *strokes of the piston in* 10 *seconds*), and ran up the inclined plane to a distance of 217 yards, by *momentum*. *Second.*—Returned to the foot of the inclined plane (using the full power of the engine), and acquired a velocity of 22 miles an hour (or 22 strokes of the piston in 10 seconds); shut off the steam, and ran, on the level plane, to a distance of 454 yards, by *momentum*. *Eleventh.*—Two engines took a load of 35 tons on the level, and reached the foot of the inclined plane with a velocity of 12 miles an hour (or 12 strokes of the piston in 10 seconds). One of the engines being left behind, the other (the Rocket) shut off the steam, and ascended a space of 177 yards, by *momentum*."

The statement with regard to the *last* experiment, it will be seen, agrees with your printed account; but the two first do not, as to the fact of the acquired velocity; yet it is a truth which Mr. Badnall will not deny, that I at first understood him to say "*twenty to twenty-two miles an hour;* but, upon my repeating those words, thinking the expression too vague, he corrected me or himself by saying, "*twenty-two precisely.*" I feel sorry for the necessity of calling upon Mr. Badnall to explain how it was that, four days afterwards, he should send you so different an account for publication. Did he mean to deceive me, or your readers? In either case, I opine, he will be considered as having rather too much of "the man of the world" in his composition. I should have taken this step before now, had I seen the paper in No. 530 sooner; but I did not get it till the 2d inst. in the last monthly part, and have since then been closely engaged in my regular vocation.

Being desirous of finding out the error, for I felt assured of its existence, and Mr. Badnall hav-

ing returned to the Isle of Man, I wrote to Mr. Booth on the subject, of which letter the following is a copy:

"Sir,—Having been invited by Mr. Badnall to witness the experiments on the Sutton plane on Tuesday, the 24th ult., I went there on that day, but, as you will probably recollect, was too late for personal observation; for, at the moment I arrived, the Rocket engine had received some damage, and Mr. Badnall, with yourself, was on the point of returning to Liverpool by the same train. Mr. Badnall gave me the principal results on our arrival at his hotel in Liverpool, which I cannot at all reconcile, upon the supposition that the inclination of *that part* of the Sutton plane is 1 in 96. Perhaps the quarter-mile post which you assumed as the *foot* of the plane is not precisely so, or some alteration may have taken place since their first construction. If accurate levels are taken, I am inclined to think the section will be found as follows:



"Should you think it necessary to have actual levels taken for the purpose of corroborating the other facts, will you have the goodness to favor me with the result? And you will further oblige by informing me when you next try experiments with reference to the undulating theory, and by allowing me to be present during the trial. I am, sir, your obedient servant, H. S.

"Sheffield, Oct. 1, 1833."

"*Postscript.*—I ventured to tell Mr. Badnall on the same evening, that there must be some material error, and that I thought it was in the assumption of 1 in 96 for the inclination. This well-meant observation, however, did not appear very palatable."

"To Henry Booth, Esq., Treasurer to the Liverpool and Manchester Railway Company."

It is to be regretted, for the sake of truth, and Mr. Booth's acknowledged character as a gentleman and a lover of science, that all the notice of this communication which I have had the honor to receive, is contained in a postscript of an unlooked-for letter from Mr. Badnall, dated October 19th. He says,—"Your letter to Mr. Booth may lead you to a better acquaintance with the precise inclination of the Sutton inclined plane; but, however the inclination may vary from the reputed rise, it cannot affect the proportionate result of experiments." True, it cannot; but it affords the means of *checking* the statement of Mr. Badnall; and there would have been another check, if that had been done which on the 24th September I said ought to have been done, namely, accurate observations recorded of the *length of time* occupied in traversing the respective spaces by means of the acquired *momenta*. This hint, it appears, has not been forgotten in trying the subsequent experiments, and its being acted upon may be attributed to Mr. Robert Stephenson, of Pendleton, who perfectly agreed with me in opinion as to its propriety. [See *Liverpool Mercury* of October 18.]

As soon as I am more at leisure I shall send you some further ideas on the undulating railway theory, which I will endeavor to condense as much as possible, and will not forget the friendly notices of your correspondents "Junius Redivivus" and "S. Y." Yours, respectfully,

Henry Sanderson.

Sheffield, Nov. 10, 1833.

Mr. Badnall's Explanation of the Alleged Discrepancies in the Reports of the Recent Experiments on the Liverpool and Manchester Railway, to determine the correctness of the Undulating Railway Theory.
[From the London Mechanics' Magazine.]

Sir,—I feel indebted by the opportunity you have afforded me of explaining the cause of the difference between the statements alluded to by Mr. Sanderson, and those sent by me to you for publication. I have no doubt that Mr. Sanderson copied my observations correctly; and those observations, at the time I communicated them to him, I believed to be perfectly correct. Mr. Sanderson is aware that, on the day the experiments were tried, I was laboring under severe indisposition; and, as the weather was extremely inclement, I did not take the same active part in the experiments as Mr. Booth, Mr. Rae, and Mr. Scott. The observations I made, as they appear in my note-book, in regard to the velocity of the engine and train at the foot of the ascent, were founded on my own calculation of the number of strokes which the engine appeared to be working when she passed the spot on which I stood. The spaces passed over were mensured, and the particulars agree with the statement which I gave to Mr. Sanderson. Immediately after the experiments were concluded I proceeded to Liverpool with Mr. Sanderson, whom I met in one of the railway carriages; and the same evening I gave him the particulars to which he alludes. He will perfectly recollect that the following day I was not, through indisposition, able to get up till one o'clock; and, having an arrangement at Manchester, I could not, on that day, compare my notes with Mr. Booth's. At *two* o'clock I left for Manchester, and gave, at Newton, the same particulars which I had given to Mr. Sanderson to *Mr. Allcard*. On the 26th or September I left Mr. Sanderson in Manchester, and returned to Liverpool; and, previously to addressing you, I considered it better to have an interview with Mr. Booth, who was in possession of the notes taken by Mr. Rae and Mr. Scott, and who had himself carefully taken down all the particulars. At this interview I found that I had over-estimated the velocity at which the piston was moving; and the statements, therefore, which I sent to you were *not my own*, as given to Mr. Sanderson, but those of three other individuals, which decidedly told more *against my principle* than *my own* would have done.

For instance, had the engine been travelling at eighteen miles an hour at the foot of ascent, before rising the hill, and twenty-two miles an hour at the same point, after descending the hill, which are the particulars given to Mr. Sanderson, the result would have shown a greater gain by the undulating system than when the velocities were fifteen strokes of the piston (or about fifteen miles an hour) before ascending, and sixteen strokes of the piston (about sixteen miles an hour) after descending, as published in your Magazine.

I have only to add, that in all the statements of the experiments which I *have sent to you*, I have cautiously avoided laying myself open to the slightest charge of error or partiality. On the contrary, my notes have always been corrected by, and compared with, the notes of others.

With regard to the particular inclination of the Sutton inclined plane, it has always been understood to be about *one* in ninety-six. After my first experiments were made, however, the levels were taken afresh, and it was found, that towards the foot of the plane the inclination was considerably less than the average rise. For instance, from the point from which the ascent of the Rocket engine, &c. was calculated, the plane rises as follows:

1st	88 yards,	1 in 122.
2d	do.	1 in 105.
3d	do.	1 in 97.
4th	do.	1 in 94.
5th	do.	1 in 92.
6th	do.	1 in 89.
7th	do.	1 in 89.

And the entire distance here denoted exceeds that to which, in any of the experiments, the train ascended.

It must, however, be evident, that however a variation in the inclinations may affect Mr. Sanderson's calculations, it cannot possibly,—which he will, no doubt, allow,—affect the comparative results of the experiments.

I remain, sir, yours, &c.,

Richard Badnall.

Farm-hill, near Douglas, Nov. 19, 1833.

N. B.—There can be no doubt as to the measurement of time being the best test; which test was adopted in all the subsequent experiments, as agreed upon by the engineers present.

[*From the Mechanics' Magazine.*]

Ericsson's Caloric Engine.—In our number for December we promised a description of Mr. Ericsson's Caloric Engine as soon as it could be procured. We have much satisfaction in being thus early able to redeem that pledge. The following is from the London Mechanics' Magazine:

The susceptibility for heat, possessed by gaseous and fluid bodies, is known to be nearly unlimited. Neither density nor pressure seems to exercise the smallest counteracting influence. The densest medium will take up a given quantity of heat with as much facility as the rarest; and when two mediums of unequal temperatures are brought in contact, they become equalized immediately, no matter how different their densities may be.

We have now to direct the attention of our readers to a mode of applying these physical truths to the production of mechanical power, which seems to us to be not only decidedly novel, but to be fraught with results of the greatest public importance.

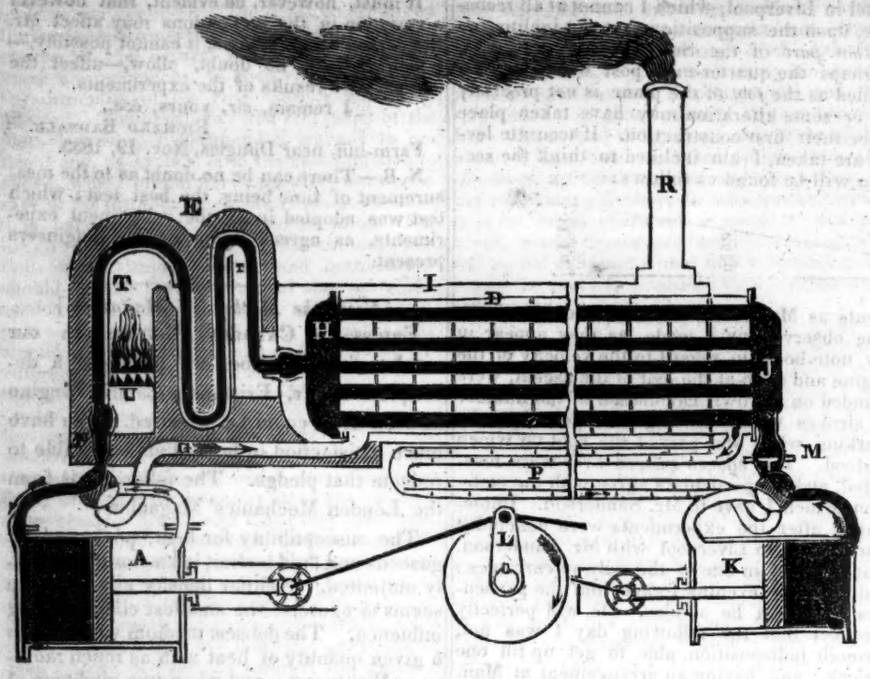
We allude to the patent recently taken out by Mr. Ericsson, for what he calls his "Caloric Engine." The grand feature by which this engine is distinguished from the steam engine, and all other power machines, is this, that the same given quantity of heat which sets it in motion is used over and over again to keep up that motion, and that no additional supply is wanted beyond what is requisite to compensate for a small loss incurred by escape and radiation.

We have seen, as well as hundreds of others, during the past week, an engine constructed on this plan actually at work, and can bear our personal testimony to its working as powerfully and equably as any steam engine could do.

The engine which we saw at work is, in all external respects, saving only the small space which it occupies, exactly similar to a high pressure steam engine. It is calculated to be of five horse power. There are two cylinders: one called the cold cylinder, 10¼ inches in diameter, and the other the working cylinder, 14 inches in diameter, both with an 18 inch stroke. The engine was worked under a pressure of 35 lbs. to the square inch, and its power checked by a break, loaded with 4,000 lbs., acting on the circumference of a wheel of 2 feet diameter.

The circulating medium employed in this engine is simply atmospheric air; but of course that or any other fluid medium may be employed with equal facility for the purpose of using the heat over and over again—some perhaps with much greater facility.

To describe the interior arrangements, by which motion is given to the engine, would lead us into a multiplicity of details, not at all necessary for the comprehension of the



principle of its action. All that is needful for this purpose the reader will find in the simplified diagramatic arrangement exhibited in the prefixed engraving.

D D is a cylindrical vessel termed the "regenerator," which, in the actual engine, is 7 feet 6 inches long, and 8½ inches in diameter, fitted with small tubes, which pass through both ends, and terminate in the caps H and J. It also contains a number of division plates, through which these tubes pass, and which plates have segments cut out alternately from their tops and bottoms. The tubes themselves likewise contain a number of small divisions, tapering off towards the centre, each placed in an opposite direction to the other. T T is one of a series of bent tubes, inclosed in a stove, E, and acted upon by the fire, U, the combustion being supported by the draft produced by a chimney, R. The pipes in the stove are all connected with two larger pipes, the one of which communicates with the cap, H, and the other, as shown by the diagram, communicates with a four-way cock, attached to the passage-pieces of a cylinder, A, which is the working cylinder of the engine. P represents one or more pipes, exposed to some cooling medium, and is termed the "cooler;" it contains also a number of division plates, similar to those in the tubes of the regenerator, as also with the four-way cock attached to the cylinder K.

The whole of the apparatus, namely, the body of the regenerator, its tubes, the caps H and J, the pipes in the stove, the cooler P, pipe G, and the two cylinders, with their passage-pieces, we will now suppose to be all charged with common air, or any other æriform substance. We will suppose also that the portion of that air which is marked black in the diagram is kept under greater pressure or more compressed than the rest, which is left blank. Let us suppose farther, that the air which the cylinder A, the stove pipes T, the cap H, and the pipe G, contain, is raised to some considerable temperature, and that the air contained in the body, as well as the air in the tubes of the regenerator, is nearly of the same temperature of that nearest to the cap H, gradually lessening towards the cap J, so as to be there of an equal temperature with the surrounding atmosphere. Now, since that portion of the air contained in the apparatus which is marked black has been changed to a greater pressure than the rest, and as the cylinder A, with its piston, is larger than the cylinder K, with its piston, it follows that motion must be produced in the direction shown by the arrow marked on the crank L.

The force thus exerted will, of course, depend on the difference of the areas of the pistons, and on the difference in pressure given to the circulating medium. It is evident that the hot air, which, by the motion of the piston, must escape from the cylinder A through the pipe G, will, in its winding passage through the body of the regenerator towards the cooler P, give out its heat to the cold air forced from the cylinder K, the particles of the latter being also in a constant state of change in passing through the tubes towards the stove pipes. The pistons having performed the full stroke, the two four-way cocks are then reversed, when a retrograde action takes place; the motion of the opposite currents in the regenerator still continuing the same as before. A constant motion will thus be produced, and a constant transfer of heat kept up. The object of the cooler P is to abstract the heat, which, on account of the different capacities for heat of the two currents, is not taken up in the regenerator, and the object of the stove is to supply the heat thus carried away, as well as to compensate for losses by radiation, and to raise the temperature at the commencement.

It need hardly be stated that the lesser volume of air coming from the cold cylinder fills the larger space in the hot cylinder, because it gets heated in passing through the regenerator and through the stove; while on the other hand, the larger escaping volume from the hot cylinder finds room in the lesser space of the cold cylinder, because it parts with its heat before getting there.

By charging the apparatus, the circulating medium may, of course, be kept under any desirable pressure, and thus the power of the engine varied at pleasure. High pressure will naturally produce the greatest proportionate effect, the loss by radiation being the same under whatever pressure.

We were anxious to satisfy ourselves as to the equality of the action of the engine, and with this view timed it repeatedly: the number of strokes was regularly 56 per minute.

The total consumption of fuel, when the engine is working at this rate, is stated to be no more than two pounds per horse power in the hour; and the entire loss of heat incurred by the transferring process (that is, the whole heat carried away by the cooler,) is estimated not to exceed the product of 3 lbs. of fuel per hour. That the fuel required is not even less than two pounds, is solely owing to the great radiating surfaces unavoidable in an engine on a small scale, and to these radiating surfaces not having in the trial engine been covered by any non-conducting substances.

Mr. Ericsson has published a pamphlet explanatory of the principle and construction of his caloric engine. We extract from it the following additional information:

"By keeping the pipes in the regenerator so charged with air as to support a column of mercury 56 inches high, the greatest effect is produced in the trial engine. By the manner in which the side-valves are worked, the pressure in the body of the regenerator always adjusts itself, so as to support a column of mercury 18 inches high; so that an effective pressure, equal to 38 inches of mercury, is kept up. A break, well oiled and loaded, with 5,000 lbs. weight acting on the circumference of a wheel of two feet diameter, fixed on the fly wheel shaft, will at the above pressure keep the speed of the engine at 55 revolutions per minute. At this speed, 176 cubic feet of heated air, of a mean pressure of 17 lbs. to the square inch, are admitted into the working cylinder per minute, thereby exerting a force equal to 431,970 lbs. moved through the space of one foot: thus $\frac{431 \cdot 970}{33 \cdot 000} = 13$ horses' power are communicated to the main crank of the engine. The estimating this power is, however, of no other use than to give an idea of the amount of friction to which the crank-engine is subjected. In the same space of time, or a minute, 94·6 cubic feet of cold air, of a mean resistance of 14 lbs. to the square inch, are forced or put into circulation by the cold cylinder, and equal to a resistance of 190,575 lbs. moved through the space of one foot. This amount, divided by 33,000, will give 5·7 horses' power required to work the cold cylinder—hence the two cranks give and receive the power of upwards of 18 horses. By communicating the power of the hot cylinder to the cold cylinder in a direct manner, the available power, setting frictions aside, would be 431,970—190,575=241,395 lbs. moved through the space of one foot. This is equal to $\frac{241 \cdot 395}{33 \cdot 000} = 7 \cdot 3$ horses' power—deducting 2·3 horses for frictions would leave 5 horses. On these grounds the trial engine has been estimated at 5 horses' power. The transferring process has succeeded to such an extent, that out of the 10 lbs. of fuel which the engine consumes per hour, the product of heat from 3 lbs. of fuel only are wasted or carried away by the cooler. This important fact has been ascertained by immersing the cooler in a cistern containing precisely 1081 lbs. of water, and by observing the elevation of temperature

after an hour's work of the engine; and the increase of temperature in that time is not quite 20 degrees—one pound's weight of fuel being capable of raising the temperature of 9,000 lbs. of water, it follows that the 1081 lbs. contained in the cistern would be raised 8·3 degrees by the combustion of 1 lb. of fuel, and hence that the actual increase of 20 degrees of temperature is effected by the combustion of less than 3 lbs. of fuel. The great discrepancy between the quantity of fuel thus wasted, and that actually consumed by the engine, must be accounted for by the fact, that a considerable extent of radiating surfaces are exposed to the cooling influence of the atmosphere without being surrounded by any imperfect conductors."

[From the New York American.]

Ithaca and Owego Railroad Company,—It will gratify the holders of the Stock of this Company to learn that there is now every reason to expect that the whole road will be ready for use, by the middle of next month. As very little if any authentic information has been given on the subject of the prospective revenue of the Company; we take the liberty of supplying the deficiency, by giving the following extract from the speech of the Hon. Charles Humphrey, in the debate on the subject of the Tompkins County Bank.

I will not trespass upon the indulgence of the House, by entering minutely into a detail of the various production of the surrounding country, which find a market at Ithaca. As some of the leading articles besides lumber, I may mention between three and four hundred thousand dollars worth of wheat and flour; between three and four hundred tons of butter; large quantities of pork; coarse grains, &c. which were exported by way of the Erie canal the last year. And notwithstanding the exports, from seven hundred to a thousand laborers, in addition to the ordinary inhabitants of the county, many of them with families, were supplied during the same period with provisions at this market; and large quantities were transported to the south and east by land carriage. I also find among my statements, derived from sources entirely to be relied upon, live stock sent from the country, to more than $150,000 in value; cotton and woollen goods to more than $100,000; between 2 and 300 tons of ashes; and several hundred tons of whiskey. The Lord only knows where this last article came from—we claim no credit for having manufactured it. There were from seventy to one hundred canal boats employed in the commerce of the county for the last year, of the average value of $500 each. *Without going more into particulars, the exports are known to have exceeded one million five hundred thousand dollars; and the imports more than one million of dollars in value.* And I am authorized from authority that admits of no doubt, to say that the commerce of the county of Tompkins pays at least *one-tenth of all the tolls received upon the Erie canal*, besides what finds an outlet through the Seneca Lake. Part of the town of Hector, embracing a coast upon the Seneca Lake, of about ten miles, a densely populated, fertile and delightful country, sends its produce and receives much of its imports through that Lake, and pays its tolls at the Geneva Office.

The village of Ithaca is compactly built, mostly inhabited by respectable and thriving mechanics; and almost all the various articles required by the surrounding country, are there manufactured. It has several handsome public buildings. As an evidence of its comparative importance, I can state, that on some days of each week, fifteen mails are opened and closed, five daily stages arrive and depart, beside several three times, twice, and once a-week; a steamboat also traverses the Lake daily.

The stockholders may, for themselves, judge what will be the probable receipts on a road over which a large portion of the business which pays *one-tenth* of the tolls of the Erie Canal will pass.

A Stockholder.

New-York, March 10th.

Animal Weather Glass.—In Germany there will be found, in many country houses, an amusing application of zoological knowledge, for the purpose of prognosticating the weather. Two frogs are kept in a glass jar, about eighteen inches in height, and six in diameter, with the depth of three or four inches of water at the bottom, and a small ladder reaching to the top of the jar. On the approach of the dry weather, the frogs mount the ladder—but when wet weather is expected, they descend into the water. These animals are of a bright green.

American Fisheries.—In a recent number, we gave some interesting facts relative to the American Whale Fishery, which we are pleased to learn has been well received and extensively copied. The Whale Fishery is a very important part of our national industry, but the Cod and Herring departments of our fisheries are by no means of small consequence. As early as 1504, vessels from Biscay, Bretagne, and Normandy, were employed in the Cod Fishery on the coasts of Newfoundland. In 1507, the French, Spanish, and Portuguese, had vessels in this lucrative trade. In 1615, the number of British increased to 250; those of other nations to 400. The pilgrim fathers of New-England were obliged to draw their first support from the sea, and then began from necessity, and was continued for profit. Previously to the American Revolution, the Cod Fishers of Massachusetts employed 28,000 tons of shipping and 4000 seamen. The annual value of their industry and enterprise was about 1,000,000 dollars.

The absurd restrictions by which Lord North attempted to deprive the Colonies of their fishing rights are well known, as also the indignant exclamation of Burke against such arbitrary conduct. The struggle which followed was, of course, injurious to this, as to all other branches of national industry, but with the peace it again revived. In 1790, Massachusetts made a representation to Congress, asking some encouragement, in the form of bounty on exported fish, which was granted, and the trade rapidly increasing in consequence of this stimulus, in 1807, 71,000 tons of shipping were employed in the Cod Fishery alone, and the exports for that and the four preceding years averaged 3,000,000 dollars.

The disputes with Great Britain respecting the orders in council gave a new check to this trade, which was, however, only temporary, for the very year after the peace was concluded, we find 68,000 tons, employing 10,000 fishermen, on the ocean; since then there has been a constant increase, so that in 1831, in the Barnstaple district alone, licenses were granted to 188 vessels, averaging 58 to 100 tons each, manned by about 1000 men and boys, the gross proceeds of which fishery were estimated at 319,000. The quantity of Cod thus annually destroyed is immense, but it is more than counterbalanced by their powers of reproduction, the roes of a single female being calculated to contain more than 9,000,000 eggs.

Mackerel, from the immense numbers which are annually taken, off Massachusetts, furnish a most important part of American trade, thousands and hundreds of thousands of barrels being annually sent to the West Indies. In 1803, the Legislature of Massachusetts passed a law for an inspection of fish. The following table will exhibit the surprising alterations, and amazing extent of this important business. The number of vessels employed in 1831 did not fall short of 400; number of men, 4000. The probable value of the proceeds of the Mackerel Fishery, for that year, exceeded a million and a half of dollars.

In 1803 the number of barrels was	8,079¼		
1805	8,936½	1818	47,210
1806	8,473	1819	105,433
1807	10,904½	1820	236,243
1808	7,738¼	1821	111,009½
1809	8,865½	1822	160,294½
1810	13,058½	1823	145,006
1811*	19,632	1824	191,650¼
1812	5,018½	1825	254,381½
1813	3,822½	1826	158,740½
1814	1,349	1827	196,310
1815 12	16,349½	1828	237,324½
1816	30,021	1829	225,882
1817	37,982	1830	309,462

Herrings are also an important article: they are certainly migratory, though their migrations may have been overruled. Their taking, it is said, the regular circuit of the sea, gives interest to their history: one immense army leave the Polar regions in the spring, equalling in extent the whole surface of Great Britain. As they advance, squadrons begin to separate from the main body. By September, England, Ireland, and Scotland are surrounded by them. From these parts, the forces move South-West, across the Atlantic, and make their appearance on the coast of Georgia about the last of January; detachments then begin to move eastward, till ultimately the whole coast of North America is lined with them, furnishing food for great numbers.—[Maryland P. Cou't.]

* The first year after the division of the state from Maine.

Compression of Water.—Mr. Jacob Perkins has invented an apparatus, which, by hydrostatic pressure, compresses water to an extent equal to a fourteenth part of its volume. The force employed is equivalent to a pressure of 30,000 lbs. to the square inch, and is applicable to other fluids. In most of our works on natural philosophy, water is treated as incompressible and non-elastic; by this apparatus the opposite of these two propositions is clearly shown. There was a considerable difficulty in getting a vessel capable of resisting so high a pressure; and the chief feature of this instrument is the manner of constructing the cylinder, which is formed of a series of concentric tubes: thus the inner or smaller tube is first formed by welding, and is turned accurately on the outer surface; the next tube is then formed, and is accurately turned on the inner surface, and the bore of this second or outer tube is just too small to receive the first tube, but, in order that it may do so, it is heated, till, by expansion, it is capable of receiving the first tube within it, and in cooling, the second tube shrinks on the first tube and strongly embraces them together; a third tube, a fourth, and so on, are similarly put on, till a cylinder is produced capable of withstanding any pressure.—[Repertory of Patent Inventions.]

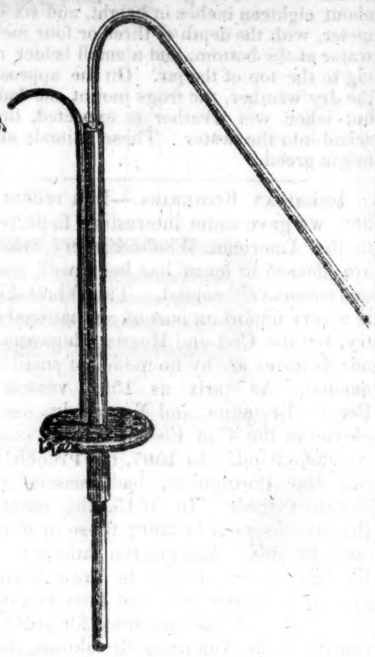
Imitation of Gold.—"A Chemist," of Washington City, publishes the following recipe for a preparation, which, applied to iron, will make it look like gold:

"Take of linseed oil, three ounces; tartar, two ounces; yolk of eggs, boiled hard and beaten, two ounces; aloes, half an ounce; saffron, five grains; turmerick, two grains. Boil all these ingredients in an earthen vessel, and with it wash the iron, and it will look like gold. If there be not linseed oil enough you may put in more."

Domestic Silk Handkerchiefs, the product of the native mulberry, have been manufactured in Dayton, Ohio, which are said to exceed the imported ones in durability.

Fig. 1.

Fig. 2.



Improved Syphons. By R. Hare, M. D., Professor of Chemistry in the University of Pennsylvania. [Communicated by the Author.]

Annexed are engravings of two syphons, which I have found useful in my laboratory. Of these, one represents the more complete method of execution; the other, that which can be more easily resorted to by chemists in general, who have no easy access to skilful workmen.

The construction last alluded to is represented by fig. 1. A cork is perforated in two places parallel to the axis. Through one of the perforations the longer leg of the syphon passes; into the other, one end of a small lead tube is inserted. In order to support this tube, it is wound about the syphon until it approaches the summit, where a portion, of about three or four inches in length, is left free, so that advantage may be taken of its flexibility to bend it into a situation convenient for applying the lips to the orifice. About the cork, the neck of a stout gum elastic bag is tied air tight. The joinings of the tubes with the cork must also be air tight. The lower half of the gum elastic bag is removed, as represented.

In order to put this syphon into operation, a bottle must be used, having a neck and mouth of such dimensions as to form an air tight juncture with the bag when pressed into it. This object being accomplished, the air must be inhaled from the bottle until the diminution of pressure causes the liquid to come over and fill the syphon. After this, on releasing the neck of the bottle, the current continues, as when established in any other way.

Fig. 2 represents the more complete construction. In this are two metal tubes, passing through perforations made for them in a brass disc, turned quite true. Through one of these tubes, which is by much the larger, the syphon passes, and is cemented air tight. The other answers the purpose of the leaden tube described in the preceding article. The brass disc is covered by a piece of gum elastic, which may be obtained by dividing a bag of proper dimensions. The covering thus procured is kept in its place by a brass band or clasp, made to embrace both it and the circumference of the plate, and to fasten by means of a screw.

Before applying the caoutchouc, it was softened by soaking it in ether, and a hole, obviously necessary, was made in the centre by a hollow punch.

There is no difference between operating with this syphon, and that described in the preceding article, excepting that the juncture of the syphon with the bottle is effected by pressing the orifice of the latter against the disc covered with gum elastic.

Description of the Vocal Organs.—[We are allowed to extract the following description of one of the most interesting parts of the human frame, from the Anatomical Class Book, by Dr. J. V. C. Smith,—the pioneer, we believe, of popular text-books on this subject.]

By voice, animals have the power of making themselves understood to their own species—and these sounds are either *articulate* or *inarticulate*.

Language is an acquired power, having its origin in the wants of more than one individual. Man, without society, would only utter a natural cry, which sound would express nothing but pain.

Supposing a human being to have been entirely forsaken by those of his species, in that state of infancy when he could have no recollection of any thing pertaining to his race, his voice would, in essence, remain the cry of an infant, only strengthened in tone, at a particular age, by the development of the vocal organs to their destined size.

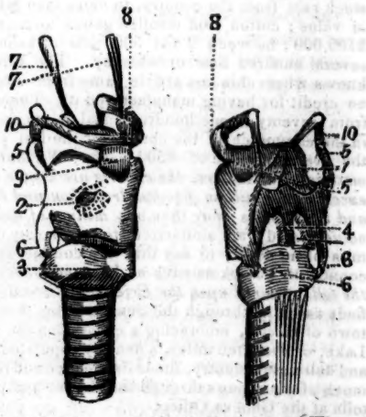
But let two individuals be placed together, but without communication or knowledge of the existence of beings similar to themselves, the natural cry of each would undergo modifications: the one would make a sound, to express a particular sensation, which in time would be understood by the other: a repetition of the same note would be the sign of that sensation in future.

An additional sensation, having an intimate connection with the first, would require a variation of tone,—and this would also become a symbol of two sensations. Here hen would be the origin of language. Multiply the species, and each new member of the society would express some other sensation or want, by another modification of the original cry. Here we discover the certain commencement of a spoken language; these different sounds becoming classified, constitute a dictionary, in which each word is the mark or sign of particular sounds; thus, if an individual can imitate the sound, or a series of sounds, he masters a language. Let it be remembered that man could never arrive to this perfection in sound or language, if his vocal organs were not differently constructed from brutes. Such is the mechanism of theirs, that so many sounds, and no more, can be made; but in man's organs, there is no limitation—no sound appreciable that he cannot imitate.

The Vocal Box, or Larynx.—Directly under the integuments on the front side of the neck, is a cartilaginous tube, the *trachea*, or wind-pipe, built up of a series of narrow strips, which are portions of a ring; therefore, it is always kept free and open. At its lower end it divides into two branches, going to the lungs on either side, but its upper portion is enlarged, just under the chin, and finally opens in common with the tube of the stomach and mouth. This enlarged part, quite prominent in man, is the *larynx* or vocal organ.

Several cartilages assist in its formation, viz., the *thyroid*, *cricoid*, the *arytænoid*, and the *epiglottis*. The cricoid is the foundation; the thyroid is the wall around it; the arytænoid are appendages to the back of the cricoid; and the epiglottis is a valve, opening and closing the entrance into the windpipe, like the valve of a bellows.

Fig. 1. Fig. 2.



Explanation of figures 1, 2.—The five cartilages are—1, the epiglottis; 2, the thyroid cartilage; 3, the cricoid auxiliary; and 4, the two arytænoid cartilages; 5, the two superior horns of the thyroid cartilage; 6, the two inferior horns; 7, the suspensory ligament of the os hyoides; 8, the os hyoides; 9, the azygos ligament, connecting the os hyoides to the thyroid cartilage; 10, the two lateral ligaments connecting the horns of the os hyoides to the superior horns of the thyroid cartilage.

One of these diagrams presents a front and the other a back view of the *larynx* or vocal box. The bone of the tongue is seen, like half of a hoop, marked 8, in both plans. 2 is the front of the *thyroid cartilage*, felt under the skin—protruding in the form of an irregular tumor. The wind-pipe is the tube

at the bottom of each larynx. The *vocal cords*—the membranes which vibrate to produce sound, as the current of air rushes by—are concealed, being placed inside. From the remarks in the text, together with the references, a very correct idea will be formed of the structure of this curious organ. By blowing through the wind-pipe of almost any animal, soon after it is slain, provided the larynx has not been injured, the vocal cords may be put in motion, and the sound which is produced will bear considerable analogy to the natural voice of the animal.

Within the larynx, and consequently below the valve, are four delicate membranes, two on each side, put upon the stretch—being, in fact, like shelves—their thin edges nearly meeting from the opposite sides, so that there is scarcely any space between them. These are the vocal cords.

When the air rushes out from the lungs through the wind-pipe, it must obviously pass through the larynx,—in doing which it strikes the tense edges of the cords, and produces a vibration. This vibratory motion given to the current of air produces sound. In the cavities of the bones of the face, forehead and nose, its power is increased, and in the mouth it undergoes further modifications, and ultimately becomes articulate language. The teeth, tongue, lips, nose and fauces, have each an influence in the production of articulate sounds. Hence grammarians have arranged the human voice under the appropriate divisions of *guttural*, *nasal*, *dental* and *labial* sounds,—expressive of the agency which each of these organs exert on the original tone.

Shrillness or roughness of voice depends on the diameter of the larynx,—its elasticity, lubricity, and the force with which the expired air is propelled through the *rima glottidis*, or slit-like chink, between the vocal cords.

It is because the larynx is smaller in women, and more elastic, that their voice is of a different character. The breaking of the voice, (*vox rauca*,) noticeable in boys, at a peculiar age, depends partly on the enlargement of the apartments within the bones, which generally takes place at that important crisis of their lives, when the whole constitution undergoes a sudden change.

But the mechanism of voice would have been incomplete, were there not a number of exceedingly delicate muscles, which graduate the diameter of the narrow slit through which the sound escapes into the mouth. Unconsciously, they effect the requisite contractions, forever varying, according to the rapidity, intensity, or strength of the voice, in singing, conversation, or declamation.

Finally, the larynx is a musical wind instrument, of the *reeded* kind, on the principle of the hautboy. The nearness of the vocal cords to each other resembles the reed precisely. All the tones of reeded instruments are effected by finger holes,—but the tones of the human voice are varied by the extrinsic and intrinsic muscles, which shorten or elongate the vocal tube. Thus the same result is produced by this process,—increasing or diminishing the diameter of the larynx, that is accomplished in the clarionet, bassoon, flute and hautboy, by a graduated scale of finger holes.

Is not this another beautiful mechanical evidence of the existence of a Being superior to ourselves!

AGRICULTURE, &c.

[*From the New-York Farmer.*]

MANAGEMENT OF BEES IN CASHMERE.—Those who take an interest in the rearing of bees will not be deterred from reading this article on account of its length.

Every farmer in Cashmere has several beehives in his house, and in some houses I have counted as many as ten. A provision is made for these in building the house, by leaving appropriate cavities in the wall, and which somewhat differ in size, but agree in their general form, each being cylindrical, and extending quite through the wall. The tube thus formed is lined by a plastering of clay mortar, about an inch in thickness, and the mortar is worked up with the chaff or husk of rice, or the down of thistles, which latter is employed for clay mortar in general, being the first application of this substance to the use of man I have yet witnessed. The dimensions of a hive are, on an average, about fourteen inches in diameter, and when closed at both ends, about twenty or twenty-two inches in length. The end of the cylinder nearest the apartment is closed by a round plaster of red pottery ware, a little convex in the middle, but with the edges made flush with the wall by a luting of clay mortar, and the other extremity is shut by a similar disk, having a circular hole about a third of an inch in diameter in the centre. It does not appear that there is any particular rule for the height of these hives from the ground, as they are sometimes confined to the walls of the lower basement story, generally appropriated to cattle in the farm-houses of Cashmere; others are inserted into those of the first floor, and are frequently in both situations in the same house, as well as the walls of its outbuildings. So great difference exists betwixt the practice ordinarily pursued in Cashmere and in Europe, in respect to hiving new swarms when the honey is taken, that it deserves imitation. Although the season for taking the honey had passed when I visited Cashmere, in the beginning of November, the cottagers indulged my wish of seeing the process by which this was effected, but with little injury to the bees and with perfect safety to the individuals concerned in its management, and which was as follows:—Having in readiness a wisp of dry straw, and a small quantity of burning charcoal in an earthen dish, the master of the house, with a few strokes of the point of the sickle, disengaged the inner plaster of the hive, bringing into view the combs suspended from the roof of the hive, and almost wholly covered with bees, none of which, however, offered to resent the aggression, or to enter the room. Having placed the straw upon the charcoal, and holding the dish close to the mouth of the hive, he blew the smoke strongly against the combs, but removed the dish the instant the straw took fire, to prevent it burning the bees, and quenched the flame before he employed it again. Almost stifled by the smoke, the bees hurried out of the outer door with such rapidity, that the hive was cleared of its inhabitants within a few minutes, when the farmer, introducing the sickle, cut down the combs nearest to him, which were secured into a dish previously slidden underneath them, and left undisturbed about one-third of the combs, which were almost close to the outer door. He then re-placed the inner plaster, and brushing off hastily a few bees that clung to the combs, though apparently in a state of stupefaction, threw them out of the house. Observing many other bees lying motionless on the floor of the hive, I inquired whether they were dead or only stupified, and was answered that they would recover; preparations for continuing my journey at a very early hour on the following morning, having unluckily prevented my examining the spot where they had been thrown out, until poultry had for some time been feeding near it. The expelled bees returned as soon as the cavity was freed from smoke, without stinging a single individual, and the whole business was completed in less than ten minutes, without, as was asserted, any perceptible loss. The honey was light-colored, and of a taste as pure and sweet as that of Narbonne. It possessed less of the cloying quality generally attending this substance, than any other I recollect to have met with; nor could I learn that the farmer had any suspicion of its ever being intoxicating or poisonous, as in the case occasionally with that made by the Bhoura (*Apis irritabilis*,) or large wild bee in the northern mountains of Gurwhal, from feeding, as it is reported, on the flower of the monkhood. I was directed more particularly to inquire upon this subject, by having observed this plant in flower in the valley of Bunga, a few miles to the eastward of the bee district, and think probable that it extends to these mountains. The peasantry of Cashmere are unacquainted with the employment of honey as the basis of a fermented liquor, but eat it raw or mixed with articles of common food, whilst the most wealthy substitute it for sugar in preserving fruits. It is customary to take the hive every year; about the end of September or beginning of October is found the best season for this operation, a little time still remaining for the bees to add to the portion left for their support during five months. This amounts to about one-third of the whole produce, and would appear to suffice, as swarms seldom die, and the Cashmeres substitute no other article of food. It is stated that an old swarm yields more honey than a young one, and that families seldom die except of old age. I was informed that it was no uncommon circumstance to preserve the same community for ten or even fifteen years; and some instances were quoted of a family having been retained for twenty years; but this was held to be a very rare occurrence. In consequence of the bees being thus literally domesticated, they acquire a mildness of conduct far more decided than those of Europe; and it is possible that the confidence thus gained, subduing their natural irascibility, may generate an increase of industry, or at least an increase of produce in relation to the number and size of the individuals of each community. It is also clear, that the situation of the hive keeps many of the natural enemies of the bees at a distance. The bee of Cashmere is a little smaller than that of Europe, though a little larger than the domesticated bee of Kumavon and of Gurwhal. The Bhoura, the rock bee of Gurwhal, or the bee of the southern mountains, is, on the other hand, greatly larger than the domesticated bee of Europe, and greatly exceeds it also in the number of individuals in each community, and in the size and weight of its combs. But its honey is sometimes contaminated by an intoxicating quality, and the temper of the insect is so irritable, as to be brought into a dangerous state of activity by a slight show of aggression. The former quality is suspected, upon probable grounds, to be caused by the secretion of the aconite eaten by the bee, and its irritability of disposition to be owing partly to the exposed situation of the combs suspended from the lower surface of a ledge of rock, and partly to the occasional attempts of bears to carry them off. But these detractions from the merits of this bee are merely the result of localities; and under due precautions, it is presumed its irascibility might be so far subdued as to render it just as safe an inhabitant of a wall-hive as the smaller variety of bee. In a portion of the Paujab, near the hills, this bee is also met with; and I have seen the under surface of the principal branches of a large Peepul tree studded with so many colonies, individually of such great strength as to deter the neighboring peasantry from attempting to deprive them of their stores, notwithstanding it was conjectured that there were several hundred weight of combs on the tree. The largest of these assemblages of combs—the probable accumulation of many

seasons—was of such a size as I think it not prudent to cite; but from the specimens I have seen of the produce of this bee, I conceive their domestication, if introduced into Europe, would prove a most valuable acquisition to this branch of farming, although I must confess myself unable to devise any safe and easy plan for transporting such a colony.—[Mr. William Moorcroft in the Journal of the Royal Geographical Society.]

Italian Rye Grass.—In the Transactions of the Highland Society, we find an article on this subject, by Mr. Charles Lawson;

This plant is said to be distinguished from the common rye grass (Lolium perenne,) by its larger leaves, by its being of a deeper green, and by the greater height to which it grows. It is usually sown in autumn, as is the general practice with grass seeds in the south of Europe. After the field is harrowed, it is sown at the rate of from 16 to 18 lbs. per acre, and the seed rolled in. In the following autumn, the turf is covered like an old meadow, and the crop of the following year is more than double. It may be also sown in spring. If it be sown with clover or lucerne, its growth is so rapid, that it will quickly choke them. It is eaten greedily by cattle, whether green or dry, and yields fifty per cent. of hay.—[Bulletin des Sciences Agricoles.]

Use of the Roller.—A very small proportion of the farmers in Western New-York are provided with this valuable implement, and I am confident that very few of them would be without it, if they knew its value.

When my wheat came up in the autumn of 1832, I discovered that in one field my hired man had not sowed it evenly; but it was then, as I thought, too late to remedy it. In the spring it presented the same unpromising appearance, being so thin in many places that I anticipated a short crop. Being disappointed in receiving my clover seed for the same field as early as I wished, I was apprehensive of a failure in that also, and to prevent it, directed my son to roll the field. Witnessing the effect, in completely pulverising the crust which had formed on its surface, I was led to conclude that the operation had not only placed the clover seed in a favorable situation to vegetate, but would benefit my wheat also; and therefore directed the residue of my wheat to be rolled. Business called me from home for several weeks, and on my return was astonished to find that my wheat had spread so as to stand nearly as thick as I wished; and at harvest it appeared to be perfectly even, and produced a fine crop. I think that I must have gained by rolling at least one-fourth. My clover seed took well.

Last spring I rolled after sowing and harrowing my oats, which came up very soon and regularly and produced a heavy crop.

The past autumn I rolled one wheat field immediately after harrowing, and I think it came up more equally and sooner for the operation. I have also rolled a part of two other fields, in order to ascertain whether rolling in autumn is beneficial to the wheat, the result of which I may hereafter communicate. The only doubt I have as to its utility, arises from the belief that snow lying on wheat is advantageous, and a fear that rolling the ground will cause it to be more easily blown off. The above mentioned trial of rolling in the spring is conclusive as to its benefits at that season. Another benefit resulting is, that the ground is left in so smooth a state that the crop is much easier cut, and gathered with less waste.

I have also experienced great benefit from the use of the roller on green sward ploughed in the fall, and left in a rough state through the winter. By passing the roller over it previous to harrowing, the inequalities are removed, and the operation of harrowing rendered much more effective.

I am led to believe that in all cases where green sward is turned under for a crop, rolling must be beneficial, even when it is to be a naked fallow, closing the interstices, and the compression having the effect to produce a more equable and thorough decomposition of the sward.

The effect of a roller on mowing grounds is to enable the mower to cut the grass closer, and to prepare the land for the use of the horse-rake: an implement which, with a horse and boy, will do the work of six men.

Now is the time for every farmer not already furnished with a roller, to procure a stick of heavy white oak, two to two and a half feet diameter, and six feet long; use gudgeons made of one and a half inch iron; drive them in the centre of the stick, then raise it so that the gudgeons will rest on blocks, when there will be no difficulty in bringing it to the shape of an exact cylinder. All that remains to be done is to make a stout frame and tongue, the latter well braced.—[Gen. Far.]

Native Grapes.—The following is the testimony of N. Longworth, Esq., one of the most extensive vine growers in this country:

The Catawba is superior as a wine and table grape to the Isabella, and matures its fruit better, though a less abundant bearer. We have native grapes in most of our states, could a selection be made, that would leave us little cause to regret that foreign grapes succeed so badly with us.

Dairy Husbandry of Holland.—Some idea may be formed of the great importance and extent of the dairy husbandry in Holland, by examining the official returns of importation into this kingdom. In the year ending 5th January, 1830, it appears that out of 148,164 cwt. of butter imported from foreign countries, 116,233 cwt. were imported from Holland; and of 168,900 cwt. cheese, 167,913 cwt. were imported from that country. The duty alone on these two articles from Holland, at 20s. per cwt. on butter, and 10s. 6d. on cheese, amounted to £204,386, and these quantities must have cost the consumers, the butter, £523,048; the cheese, £292,282; total, £815,330.—[Mr. Mitchell on the Dairy Husbandry in Holland.]

Substitute for Sweet Potatoes.—The cocoanut squash, cut into pieces, and roasted like sweet potatoes, is found to be fully equal to them, and so closely to resemble them in flavor that it would be difficult to distinguish between them. It grows freely in this climate, and may be kept till mid-winter.—[Goodsell's Farmer.]

Culture of Silk.—Wednesday, in the House, the bill to encourage the cultivation of Mulberry Trees and the production of Silk was passed to a third reading. This bill gives a bounty of two dollars for every hundred of trees set out at the rate of 600 to the acre, and one dollar for every pound of domestic reeled silk. The consideration of the above bill was attended by a very interesting debate, in which the following gentlemen took part: Messrs. Gray, Moseley, Rockwell, Eustis, Thayer, Chapman, Forward, M'Kay, Lincoln, and Kinsman. Mr. Moseley communicated much interesting information. He stated that the mulberry tree would grow in any country between 20 and 50 degrees of latitude—that sandy and gravelly soil suited it best—that the required labor could be performed by children—and that 600 lbs. of silk, worth $3 per lb., could be obtained from the worms fed on the trees which could be raised on one acre of ground.

Mr. Chapman, of Greenfield, who opposed the bill, made some judicious remarks as to such articles as are ornamental, and such as are useful. But the question was not whether our people had better wear silk, but whether, if they will wear it, it is best that a good part of it should be produced in this country, or that nearly the whole should be imported. He wished our farmers' wives and daughters should be able to procure silks at 50 cents a yard, rather than at a dollar. Domestic competition may effect this. But, if we do not choose to wear silk, we may produce it to export.—[N. E. Farmer.]

Soil and Agriculture in Ohio.—The bottom lands are low and subject to occasional floodings, but are of a very rich soil. Pickaway county is nearly square in outline, being twenty-two by twenty-one miles in extent, and contains sixteen thousand inhabitants. The Scioto river passes through it from N. to S. dividing it into two nearly equal portions. The lands on the east side are of a very excellent quality, and produce all the different kinds of grain in the most luxuriant abundance. The county contains four varieties of soils, wood lands, barrens, plains and prairies. On suitable soils, from forty to forty-five bushels of wheat are produced, and in early days, before the rich prairies were reduced by successive crops, one hundred bushels of corn per acre were not uncommon. By the rich farmers, cultivation is carried on in a style and grandeur proportionate to the exuberance of the crops. Fields of one hundred acres of wheat, or of corn, are often seen, and frequently they are extended to three or four hundred. A few years since, when wheat commanded a dollar per bushel, a rich farmer on the Pickaway plains cultivated one thousand acres in a single field, which, when undulating under a gentle breeze, might not unaptly be called an ocean of verdure. In all the counties bordering on the canal, there has, since it was opened, been an increase in the value of wheat of from ten to fifteen cents per bushel, and so of many other articles: the canal giving them the advantage of the New-York markets, whereas, before, they had only that of the Mississippi.—[Silliman's Journal.]

Application of Steam to Agriculture.—We hope the day will never come when there shall be so much ignorance and prejudice in this country that our farmers will be in that condition mentioned in the last sentence of the following paragraph, taken from the London Gardener's Magazine.

The application of steam to agricultural purposes is said to have lately called forth a powerful and effective engine in France; and it has at the same time produced a steam digging machine in England. This engine, an imperfect model of which we saw three years ago, has lately been so far improved that a patent has been taken out for it by Mr. Philips. It will be found figured and described in Gordon's Journal of Locomotion, for February, 1833. We have lately seen the model of another machine, which may be applied to the same purpose, and, as it appears to us, with much greater chance of success. At one operation it could be made to plough, pulverize, roll, sow, and harrow, a breadth of 10 feet or 12 feet, at the rate of 5 or 6 miles, and consequently between 7 and 8 acres per hour. The machine might, no doubt, be impelled at double that rate; but it is questionable whether at such a velocity the work of sowing could be properly performed. The present, however, is not the time for bringing out such a machine in

England, where the farmers, in most districts, are obliged to take down and conceal the wheels of their threshing machines, if these have not been already burned by their laborers.

Chinese Roses may be propagated from single buds, as grape vines are propagated. The single bud, with a quarter of an inch of the stem, both above and below it, is placed just under the soil, under a bell-glass; the leafstalks and leaves standing upright as in a cutting. A single bud of Rosa semperflorens sanguinea was planted on July 26, and on September 8. October 9 it was six inches high, and side shoots were being produced.—[Charles M. Willich, London, Oct. 3, 1833.]

Gypsum.—The editor of the Farmer's Register says he has found gypsum very efficacious on a soil which, before it had been marled, exhibited no beneficial effects.

Manure in Dry Seasons.—Dr. J. P. Beekman, of Kinderhook, in writing to the editor of the Farmer's Register, says, "There is an ameliorating and fructifying quality about the sod that imparts its powers to the grain that succeeds it, which is not discernible in the properties of the manure; and in dry seasons the effects of this last are *almost entirely lost*." We should be pleased to learn from Dr. Beekman, whether this manure was properly fermented, or in its coarse unrotted state? It seems to us a subject of much importance to avoid this loss of manure and time.

Suggestions relative to Gardeners' Work for March. By the Editor.

The month of March, like a fickle and inconstant person, is neither admired nor loved. Sometimes, indeed, it puts on a cheering and smiling aspect, inviting us to visit its lawns and its promenades, and to listen to the first notes of spring music. Again, all is chill and gloom; no cordiality, no welcome reception, but all is forbidding and stormy. Its character being known, very little is expected from it; and consequently, most people are on their guard against its fickleness and deceptive appearances. Most gardeners venture to do little more than to make diligent preparations for the more mild, uniform, and lovely April.

In reference to early and late sowing, we refer our readers to the article in this number, page 66. Although late sowing may insure greater crops, yet, after a long winter, it is very desirable and very natural to have early vegetables. Should March be proportionably mild, as the past February has been, vegetation will be some ten or fifteen days earlier than usual. The seeds of many kinds of vegetables may be put in boxes and pots, and placed in the kitchen, or other warm situations; and when the season is sufficiently advanced, the young plants should be removed with the dirt or soil into the ground in the open air. Peas may very easily be advanced in this way. Some plant their peas, beans, and potatoes, on inverted sods of earth, placed in convenient boxes, and kept moist. When the time arrives to transplant them into the garden, the sods are easily taken up with growing vegetable, and properly placed in their permanent place.

Rhubarb, Rheum rhaponticum.—Those who have this vegetable should, if they have not done it before, place over each plant a barrel, or large box, which, if covered with heating horse manure, will soon cause them to grow and be beautifully blanched. In the latter part of the month, or early in April, the leaves will be sufficiently large for making the much admired rhubarb pies.

Transplanting.—As soon as the ground is thawed, those who conveniently can, should begin to transplant. It is much better to commence early this month than to run the risk of delaying until vegetation starts. Those who are desirous to have fruit trees already in bearing, and their premises embellished with sizeable ornamental trees, should immediately undertake the business.

Manure.—Whatever diversity of opinion may be entertained respecting rotted and unrotted manure in field culture, there should be none in reference to garden operations. Let the manure be well fermented and in a moist state, particularly in a sandy soil. A more uniform growth and greater certainty of maturity are the consequences of using fermented manures. For flowers and vegetables, bone manure has advantages.

Cultivation of Peach Trees. By D. B. [For the New-York Farmer and American Gardener's Magazine.]

In the New-York Farmer for January, page 2, is an article on the cultivation of the peach tree, by R. H. B., in which he says that "peach trees may be preserved by good management, twenty, and probably forty or fifty years." Whether it be true, as he asserts, that the peach tree is "destroyed by a worm which feeds on the inner bark of the tree, at its root," I am not about to admit or deny. If, however, it is true, as he asserts, "that the peach tree, if the worm is kept out of the root, will live at least twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession," it would seem that any means by which a "lodgment" of the worm in the "inner bark of the tree could be *prevented*, would conduce more to the general health and vigorous growth of the tree than any attack upon them, after, a "lodgment" was once effected, could possibly do. Now, my object is not controversy, but to suggest to R. H. B., and others, what I deem an effectual method of preventing a "lodgment" of the worm in the "inner bark of the tree." Previous to 1832 I had made repeated trials to cultivate the peach tree, with the same uniform ill success. Till the second or third, and sometimes till the fourth year, my trees were healthy and their growth vigorous, when they would begin to decline and soon die, and often without any apparent injury from the worm. From repeated failures, I had wholly abandoned their cultivation as hopeless. In the spring of that year a friend of mine, agent for the Messrs. ——, had a lot of peach trees consigned to him for sale. They were offered for a time at private sale, and finally advertized to be sold at auction; but a part only could be sold, the trees having been out of the ground so long, and the season so far advanced that there remained no prospect of selling them. I had from the agent the offer of a bundle of the trees, and found them, as I supposed, refuse trees, probably taken from a part of the nursery which was to be cleared to make room for a new crop. Unpromising as they were, I made them the subjects of the following experiment. A hole was dug, large enough to admit the roots in their natural position; after which, sufficient earth was hauled over the roots to cover the smaller ones, and support the tree in its position. A kettle of common tar was at hand, warmed so as to enable me to spread it freely over the larger roots, and up the body of the tree several inches above the surface of the ground. The holes were then filled with earth as usual. All the trees thus treated, (23 in number,) started, but the greater part of them, as I expected, from the unfavorable circumstances already related, died in the course of the summer. Those that survived the first summer, (8 or 10 in number,) have grown very vigorously, and are now apparently as healthy as any trees I have of any description. I have from time to time examined them, and, as often as appeared necessary, have removed the earth and made a fresh application of tar, and again replaced the earth. This is in no case necessary more than twice in a year, generally once is sufficient; and, perhaps, as a general rule, the fall would be the best season, if but one dressing was given in a year, for the reason that the winter would not perceptibly diminish the quantity; and if applied in the fall, would always be in season to prevent the early ravages of the worm.

Granting what R. H. B. assumes to be the fact, that the worm is the cause of the destruction of peach trees, it is certainly important, if possible, to *prevent* its ravages. He proposes a "remedy," which he says "consists in searching for the openings in the bark at the root, and taking them out." In this, as in every other case, *preventive* is better than "remedy." Let then R. H. B., and all others who would prevent a "lodgment" of the worm "at the roots" of their peach trees, try the application of tar as above directed; and if faithfully done, I hesitate not to say that the *preventive* will be found more effectual, and attended with less trouble, than the "remedy," and may, by wholly excluding the worm, help to settle the question, whether it is the cause of the decay of peach trees, or only a consequence of it. D. B.

Ridgefield, Ct., February, 1834.

Love of Music by Sheep.—We were surrounded by a large flock of sheep which were leaving their fold to go to pasture; one of our party took his flute out of his pocket, and saying, "I am going to turn Corydon, let us see whether the sheep will recognize their pastor," began to play. The sheep and goats, which were following each other towards the mountain with their heads hanging down, raised them at the first sounds of the flute; and all, with a general and hasty movement, turned to the side from whence the agreeable noise proceeded. Gradually they flocked round the musician, and listened with motionless attention. He ceased playing; still the sheep did not stir. The shepherd with his staff obliged those nearest to him to move on. They obeyed; but no sooner did the fluter begin again, to play, than his innocent auditors returned to him. The shepherd, out of patience, pelted them with clods of earth, but not one of them would move. The fluter played with additional skill; the shepherd exasperated, whistled, swore, and pelted the fleecy amateurs with stones. Such as were hit by them began to march, but others still refused to stir. At last the shepherd was obliged to entreat our Orpheus to cease his magical sounds. The sheep then moved off, but continued to stop at a distance as often as our friend resumed his instrument.—[Vie de Haydn par Bombat.]

NEW-YORK AMERICAN.

MARCH 8—14, 1834.

LITERARY NOTICES.

Owing to the distant region in which our accomplished correspondent—whose letters under the initial H. have been so eagerly and justly sought after—is now travelling—as well as to the irregularity of the mails, we have no letter from him to present to-day.

We must add, too, that although we have on our table several interesting and valuable publications claiming notice, we are so absorbed in the all-important political discussions of the day, that we must for a while ask the indulgence, both of our literary readers and friendly publishers. We can only to-day speak of a few.

Letters of Major Jack Downing, 1 vol. New York: Harper & Brothers.—The celebrity of *Major Jack Downing* is not surpassed at this day in the U. States, by that of any individual, however exalted. The public voice has unanimously awarded to his letters the praise of a consistent graphic record of the acts and doings of the President and his advisers—which, without ever violating the unity of *the old General's* character, uses up, without stint, the interested speculators who betray his confidence.

This volume—which we need hardly say contains the letters originally published in the Daily Advertiser—is well printed, and illustrated with some amusing and spirited engravings.

History of Sculpture, Painting and Architecture: by J. S. Memes, L. L. D. 1 vol. Boston—Clapp & Broadus.

It is not without justice that we may claim as Americans to have already produced in our short career as a nation many remarkable P ainters—the names of some of whom will certainly live. In Sculpture we have been less distinguished; though Greenough, and Auger, and Frazee, are in that branch of the fine arts, too, winning renown; but in Architecture, all is blank with us. The bump of building, if phrenologists will allow us so to speak—we have abundantly; but that of architecture has not, to our knowledge, as yet been practically developed on any American head. Hence, we are gratified in seeing this number of *Constable's Miscellany* re-published in this country; and commend it to our readers in the persuasion that they will find it agreeable in its style and abounding in information imparted with good taste.—We have marked some extracts which at a future day we shall publish.

The American Monthly Magazine, for March.—We can give unstinted praise to this periodical—which goes on with talent, industry, and spirit; and we are glad to learn with increasing success. We copy part of a very spirited article—"passages of the Life of Mary Stuart." The ill-fated *Chastelar* having just discovered to Mary his love, and been indignantly dismissed—the scene is thus continued:

An hour had scarcely elapsed, before the lights were extinguished throughout the vaulted halls of Holyrood; the guards were posted for the night, the officers had gone their rounds, the ladies of the royal circle were dismissed, and all was darkness and silence. In Mary's chamber a single lamp was burning in a small recess, before a beautifully executed painting of the virgin, but the light was not sufficient to penetrate the obscurity which reigned in the many angles and alcoves of that irregular apartment, although the moonbeams were admitted through the open casement.

Her garb of ceremony laid aside, her lovely shape scantily veiled by a single robe of spotless linen, her auburn tresses flowing in unrestrained luxuriance almost to her feet, if she had been a creature of perfect human beauty when viewed in all the pomp of royal pageantry, she now appeared a being of supernatural loveliness. Her small white feet, unsandalled, glided over the rich carpet with a grace, which a slight degree of fancy might have deemed the motion peculiar to the inhabitants of another world. For an instant, ere she turned to her repose, she leaned against the carved mullions of the window, and gazed pensively, and it might be, sadly, upon the garden, where she had so lately parted from the unhappy youth, whose life was thus embittered by that very feeling, which above all others should have been its consolation. Withdrawing her eyes from the moonlit scene, she knelt before the lamp and the shrine which it illuminated, and her whispered orisons arose, pure as the source from which they flowed—the prayers of a weak and humble mortal, penitent for every trivial error, breathing all confidence to Him, who can alone protect or pardon; the prayers of a Queen for her numerous children, and last and holiest of all, a woman's prayers for her unfortunate admirer. Yes, she prayed for Chastelar, that strength might be given to him from on high, to bear the crosses of a miserable life, and that by divine mercy the hopeless love might be uprooted from his breast. The words burst passionately from her lips, her whole form quivered with the excess of her emotion, and the big tears fell like rain from her uplifted eyes. While she was yet in the very flood of passion, a sigh was breathed so clearly audible, that the conviction flashed like lightning on her soul, that this most secret prayer was listened to by other ears than those of heavenly ministers. Terror, acute terror, took possession of her mind, banishing by its superior violence every less engrossing idea. She snatched the lamp from its niche—waved it slowly around the chamber,—and there, in the most hallowed spot of her widowed chamber, a spy upon her unguarded moments, stood a dark figure. Even in that moment of astonishment and fear, as if by instinct, the beautiful instinct of purely female modesty, she snatched a velvet mantle from the seat on which it had been cast aside, and veiled her person even before she spoke—"Oh God it is de Chastelar."

"Sweet Queen,"—replied the intruder—"bright, beautiful ruler of my destinies, pardon—"

"What ho!"—she screamed in notes of dread intensity—"*à moi à moi mes François.*—My guards!—Seyton—Carmichael—Fleming—will ye leave your Queen alone! alone with treachery and black dishonor!—Villain! Slave!—"she cried, turning her flashing eyes upon him, her whole form swelling as it were with all the fury of injured innocence—"didst thou dare to think that Mary—Mary, the wife of Francis—the annointed Queen of Scotland, would brook thine infamous addresses—Nay kneel not,—or I spurn thee—What ho! will no one aid in mine extremity—"

"Fear nought from me—" faltered the wretched Chastelar, but with a voice like that of some inspired Pythoness she broke in—"Fear! think'st thou that I could fear a thing, an abject coward thing, like thee?—a wretch that would exult in the infamy of one whom he pretends to love. Fear thee—by heavens, if I could have feared, contempt must have forbidden it."

"Nay—Mary—hear me! hear me but one word, if that word cost my life—"

Thy life—had'st thou ten thousand lives, they would be but a feather in the scale against thy monstrous villany. "What ho!—" again she cried, stamping with impotent anger at the delay of her attendants—"Treason! My guards—Treason!" At length the passages rang with the hurried footsteps of the startled inmates of the palace—with torch, and spear, and brandished blades, they rushed into the apartment—page, sentinel, and chamberlain, ladies, with dishevelled hair, and faces blanched with terror.—The Queen stood erect in the centre of the room, pointing with one white arm bare to the shoulder towards the wretched culprit, who with folded arms and head erect awaited his doom in unresisting silence. His naked rapier, with which alone he might have foiled the united efforts of his enemies, lay at his feet—his brow was white as sculptured marble, and no less rigid, but his eyes glared wildly, and his lips quivered as though he would have spoken. The Queen, still furious at the wrong which he had done her fame, marked the expression. "Silence!" she cried—"Degraded!—would'st thou meanly beg thy forfeit life—Wert thou my father, thou shoud'st die to-morrow!—Hence with the villain!—Bid Maitland execute the warrant—Ourself—Ourself will sign it—away! Chastelar dies at day break!"

"Tis well—" replied he calmly—"it is well—the lips I love the best pronounce my doom; and I die happy, since I die for Mary!—Would'st thou but pity the offender, while thou dost doom the offence, de Chastelar would not exchange his shortened span of life, and violent death, for the brightest crown of Christendom. My limbs may die—my love will live for ever! Lead on minions—I am more glad to die, than ye to slay!—Mary—Beautiful Mary—think! think hereafter upon Chastelar!"

The guards passed onward—last of the group, unfettered and unmoved, de Chastelar stalked after them. Once, ere he stooped beneath the low browed portal, he paused, placed both hands on his heart, bowed lowly and then pointed upwards, as he chanted once again the words *Penses à moi—Noble Dame—Pensez à moi.* As he vanished from her presence, she waved her hand impatiently to be left alone—and all night long she traversed and re-traversed the floor of her chamber in paroxysms of the fiercest despair. The warrant was brought to her—silently, sternly, she traced her signature beneath it,—not a sign of sympathy was on her pallid features, not a tremor shook her frame; she was passionless, majestic, and unmoved. The secretary left the chamber on his fatal errand—and Mary was again a woman. Prostrate upon her couch she lay, sobbing and weeping as though her very soul was bursting from her bosom, defying all consolation, spurning every offer at remedy. "'Tis done!" she would say—"'Tis done!—I have preserved my fame, and murdered mine only friend."

The morning dawned slowly—and the heavy bells of all the churches clanged the death peal of Chastelar. The tramp of the cavalry defiling from the palace gates struck on her heart as though each hoof dashed on her bosom. An hour passed away—the minute bells still tolling—the roar of a culverin swept heavily downwards from the castle, and all was over!—He had died as he had lived, undaunted—as he had lived, devoted!—"Mary, divine Mary,"—were his latest words—I love in death, as I have loved in life—thee and thee only." The axe drank his blood, and the Queen of Scotland had no a truer servant left behind, than he, whom for a moment's frenzy she was compelled to slay—yet was his last wish satisfied, for though the Queen might not relent, the woman did forgive, and, in many a mournful hour did Mary think on Chastelar. H.

Lucia, the Betrothed, from the Italian of *Alessandro Manzoni*, 2 vols; New York, G. Dearborn.—This translation from a novel—if so we must call a work full of the finest developments of character, and tending to the highest moral aims—renowned in Italian literatuae, is a welcome contribution to our own. It furnishes a view of Italian manners and society in the commencement of the seventeenth century, of great power and interest; its historical details are curious and instructive; and in the extract we make, descriptive of a city laboring under the panic and sufferings of a pestilence, the vigor of the author's pen will be acknowledged and felt by all. It is a remarkable coincidence, that the same delusion which, during the plague of Milan in 1628-9, affrighted the populace with the idea that secret poisons were producing all the mischief, prevailed during the existence of the Cholera in Paris, more than two centuries afterwards, namely in 1832.

The translation is, throughout, faithful almost perhaps to a fault:

The council of ten then requested the cardinal to order a solemn procession, for the purpose of carrying through the streets the body of San Carlos.—The good prelate refused; this confidence in a doubtful means disturbed him, and he feared, if the effect should not be obtained, confidence would be converted into infidelity, and rebellion against God. He also feared that if there really were poisoners, this procession would be a favorable occasion for their machinations, and if there were not, so great a collection would have a tendency to spread the contagion.

The doors of public edifices and private houses had been again plastered with venemous substances; the news of the discovery flew from mouth to mouth; the people, embittered by present suffering, and irritated by the imminence of the danger, embraced the belief voluntarily; as the idea of subtle instantaneous poison was more than sufficient to explain the violence, and the most incomprehensible circumstances of the disease. Adding to it the idea of enchantment, by which any effect was possible, any objection rendered feeble, every difficulty was explained. If the effects did not immediately succeed the first attempt, the cause was easy to assign; it had been done by those to whom the art was new, and now that it was brought to perfection, the perpetrators were more confirmed in the infernal reso-

lution. If any one had dared to suggest its having been done in jest, or denied the existence of a black intrigue, he would have passed for an obstinate fool, if he had not incurred the suspicion of being himself engaged in the plot. With such persuasions on their minds, all were on the alert to discover the guilty; the most indifferent action excited suspicion, suspicion was changed to certainty, and certainty to rage.

As illustrations of this, the chroniclers cite two examples which we will relate.

In the church of Saint Antonio, on the day of some great solemnity, an old man, after having prayed for some time on his knees, rose to seat himself, and before doing so, wiped the dust from the bench with his handkerchief. "This old mun poisons the bench," cried a woman, who beheld the action.—The crowd in the church threw themselves upon him, tore his white hair, and after beating him, drew him out half dead, ro carry him to prison and to torture. "I saw the unfortunate man," says Riparmonti, "I never knew the end of his painful story, but at the time I thought he had but a few moments to live."

The other event occurred the next day, it was as remarkable, but not as fatal. Three young Frenchmen having come to visit Italy, and study its antiquities, had approached the cathedral, and in passing by, stopped; a circle was formed around them; they were not lost sight of for a moment, having been recognized as strangers, and especially Frenchmen. As if to assure themselves that the wall was marble, the young artists extended their hands to touch it. This was enough. In a moment they were surrounded, and with imprecations and blows dragged to prison. Happily however, they were proved to be innocent, and released.

These things were not confined to the city; the phrenzy was propagated equally with the contagion. The traveller encountered on the high road; the stranger whose habits or appearance were in any respect singular, were judged to be poisoners. At the first intelligence of a new comer, at the cry even of a child, the alarm bell was rung; and the unfortunates were assailed with showers of stones, or seized and conducted to prison. And thus the prison itself was, during a certain period, a place of safety.

Meanwhile, the council of ten, not silenced by the refusal of the wise prelate, again urged their request, which the people seconded by their clamors. The cardinal again resisted, but finding resistance useless, he finally yielded; he did more, he consented that the case which enclosed the relics of San Carlos, should be exposed for eight days on the high altar of the cathedral.

The Tribunal of Health, and the other authorities did not oppose this proceeding; they only ordained some precautions, which without obviating the danger, indicated too plainly their apprehensions. They issued severe orders to prevent people from abroad entering the city, and to ensure their execution, commanded the gates to be closed. They also nailed up the sequestered houses; "the number of which," says a contemporary writer, "amounted to about five hundred."

Three days were employed in preparation; on the 11th of June, the procession left the cathedral at day break; a long file of people, composed for the most part of women, their faces covered with silk masks, and many of them with bare feet, and clothed in sackcloth, appeared first. The tradesmen came next, preceded by their banners; the societies, in habits of various forms and colors; then the brotherhoods, then the secular clergy, each with the insignia of his rank, and holding a lighted torch in his hand. In the midst, amid the brilliant light of the torches, and the resounding echo of the canticles, the ease advanced, covered with a rich canopy, and carried alternately by four Canons, sumptuously attired. Through the crystal were seen the mortal remains of the saint, clothed in pontifical robes, and his head covered with a mitre. In his mutilated features might still be distinguished some traces of his former countenance, such as his portraits represent him, and such as some of the spectators remembered to have beheld and honored. Behind the remains of the holy prelate, and resembling him in merit, birth and dignity, as well as in his person, came the Archbishop Federigo. The rest of the clergy followed him, and with them the magistrates in their robes, then the nobility, some magnificently clothed, as if to do honor to the pomp of the celebration, and others as penitents, in mourning habits and bare feet; each one, however bearing a torch in his hand. A vast collection of people terminated the procession.

The streets were ornamented as on festival days; the rich sent out their most precious furniture; and thus the fronts of the poorest houses were decorated by their more wealthy neighbors, or at the expense of the public. Here, in the place of hangings, and there, over the hangings themselves, were branches of trees; on all sides hung pictures, inscriptions, devices; on the balconies were displayed vases, rich antiquities, and valuable curiosities; with burning flambeaux scattered throughout. From many of these windows the sequestered sick looked upon the pomp, and mingled their prayers with the people as they passed. The procession returned to the cathedral about the middle of the day.

But the next day, whilst presumptuous confidence and fanatical assurance had taken possession of every mind, the number of deaths augmented in all parts of the city, in a progression so frightful, and in a manner so sudden, that none could avoid confessing the cause to have been the procession itself. However—astonishing and deplorable power of prejudice! this effect was not attributed to the assemblage of so many people, and to the multiplicity of fortuitous contact, but to the facility afforded to the poisoners to effect their infernal purposes. But as this opinion could not account for so vast a mortality, and as no traces of strange substances had been discovered on the passage of the procession, recourse was had to another invention, admitted by general opinion in Europe—magical and empoisoned powders! It was asserted that these powders scattered profusely in the road, attached themselves to the skirts of the gowns, and to the feet of those, who had been on that day barefooted; thus the human mind delights itself with struggling under the weight of phantoms of its own creating.

We conclude the review—not imappropriately—with the following notice from a correspoudent.

Mr. Editor:—I have before me a small pamphlet containing Professor Faraday's remarks on the prevention of Dry Rot in Timber. This is a subject almost as interesting here as in England, and from the facts stated, it seems that a remedy for this evil has finally been discovered by a Mr. Ryan. It consists in an application of corrosive sublimate to the wood, which either destroys the seeds of cryptogamous plants vegetating in the wood, or combines with the albuminous matter existing in wood, both of which circumstances have been considered the original causes of the decay, called Dry Rot.

Mr. Ryan, under the sanction of the Admiralty, made many experiments for years, and they appear to have been eminently successful. The timber is prepared by being soaked in a solution of corrosive sublimate; a cube of wood thus prepared, was put into the capstan hole, at Woolwich, a place subject to the fungus rot; at the end of three years it was taken out—it was sound, while the other timber was entirely decayed; it was replaced for two years; at the expiration of five years, it was found perfectly hard and sound, and exhibited no symptom of the least decay. Other experiments equally satisfactory are related.

The application has been made to canvass, &c. placed in a damp cellar for months; the prepared pieces came ont sound, while the unprepared were so decayed as not to be capable of being unrolled—the texture of the cloth appears not to suffer by the application. Mr. Ryan has taken a patent for his important invention.

Without any practical knowledge on the subject, I thought a reference to it might excite the attention of some of your readers, better able to investigate the merits, and appreciate the advantages of the discovery.

FOREIGN INTELLIGENCE.

From Paris we have by the Sully our files to the 2d February. They do not furnish any special information.

The Gazette de France of 1st February says, in relation to Spain, "letters from the frontiers speak vaguely of the convoking of the Cortes. The partisans of Don Carlos appear to be concentrating their forces upon Aspeitia. The struggle leads to terrible reprisals, prisoners on either side being daily shot."

We do expect later news, however, from Spain. Meantime we give the annexed from the *Indicateur de Bourdeaux*: "What we have before stated as certain, that the new Minister, *Martinez de la Rosa*, would only consent to enter the Ministry on condition that the Cortes should be convened, has been realized. It was communicated by express on the 25th January, in Bourdeaux, that orders had just been issued by the Spanish Government for immediately convening the Cortes, *par estamentos*."

The capture of *Leyria*, midway between Oporto and Lisbon, on the 15th January, by the troops of the Queen, seems to have been received in Lisbon as a decisive event. It re-establishes the line of communication between the two principal cities of Portugal.

Miguel's troops still hold Santaren, contested by 12,000 men, under the *Duke de Terceira*.

The duel between General Bugeaud and *M. Dulong* arose from a discussion in the Chamber of Deputies respecting military obedience. *General Bugeaud* said—"a soldier's duty was to obey." *M. Dulong* interrupted—"what, obey even to the extent of becoming a gaoler! even to ignominy!" This allusion was to General Bugeaud's having been the commandant at *Blaye* when the Dutchess of Berri was prisoner there. M. Dulong was just forty year's old, and appears to have been much esteemed.

The debate in the Chamber of Deputies above alluded to, was produced by a measure taken by the government in relation to incorporating naval officers with the artillery, which had been resisted by the officers of the latter corps, many of whom had in consequence been imprisoned.

Paris, 30th Jan.—A duel had taken place between General Bugeaud and Mr. Dulong, both members of the Chamber of Deputies, in which the latter was killed. The duel arose from a political quarrel.

In our papers, which only go back to the 24th, we do not find any allusion in the Chamber to the Convention of Indemnity with this country.

It is asserted in various letters published in the French papers, that the loss of the French line of battle ship *Superbe* in the gale of 14th and 15th December, (in which the frigate United States was also damaged) was occasioned by the insubordination and refusal to do duty, of the crew.

Spain

[*From the Journal du Commerce of 31st Jan.*]

Madrid, 18th Jan.—The whole capital is delighted with nomination of Martinez de la Rosa, who enjoys unbounded confidence. It is to be hoped that the monarchy will flourish under his wise and liberal administration. The Cortez are to be convoked, it is said, by the first of May. The news of the retirement of M. Zea is received with enthusiasm throughout the provinces.

M. Vasquez Figuerso, the newly appointed minister of Marime, has declined in consequence of ill health.

The Count of Toreno, has congratulated the Queen in the name of the provinces. This gentleman is much esteemed by the Government, and it may be expected that he will soon form part of the administration.

The national guard is to be reorganized, upon the same basis as previous to the dismissal of M. Zea, but the government will reserve to itself, the selection and appointment of its officers.

The government will soon publish a political manifesto. As the principles of M. Martinez de la Rosa are well known, there is no doubt of its being well received by the public.

The King of Denmark has already accredited an ambassador at the government of Elizabeth II. as have the governments of the Hanseatic towns of Germany.

The departure of a Spanish ambassador for Lisbon is spoken of.

The Carlist bands are every where destroyed, thanks to the courage and devotion of the people: with the exception of the inhabitants of Navane and Biscay, for the obstinacy of the inhabitants of the provinces cannot yet be overcome.

Several individuals attached to the administration, and suspected of Carlism, have been dismissed.

The Duke of Medina Coeli, grandee of Spain, and member of the council of regency, has given up for

the benefit of the treasury, his salary, amounting to 30,000 francs per annum.

The Director General of the Treasury, Mr. Peres, has announced to the Government that the national expenses for the first quarter of the year 1834, will be promptly met, the estimated revenue for that period having already been secured.

The financial system of M. Gargolis is generally disapproved of. This is not astonishing, for Martinez de la Rosa would not form part of a Cabinet, which would announce a refusal of the engagements of the years 1820 and 1821. Mr. Martinez has always supported the principle that the nation should recognize any debt contracted in the name of Spain by its government.

The Journal des Debats of the 30th January, says that a report had obtained prevalence that day, that Don Carlos had entered Spain at the head of 8000 men. They add, that in all probabability there is no foundation for the report, as probably it grows out of a rumor, that the Carlists would renew their efforts during Lent, when the whole of Spain is under the complete dominion of the clergy. They likewise express an opinion that these prophesied disturbances will meet with the same result as those in France, and be entirely unattended to.

We give the following further particulars from

PORTUGAL.

PARIS, 20th January.—The news from Lisbon, by way of London, are favorable to the cause of Donna Maria: her forces have obtained more important advances than have yet signalised their efforts.

Gen. Sandaha, at the head of a division of 5000 men, reinforced by a detatchment faom the garrison of Peniche, took possession on the 15th January of the city of Leyria, a very strong position between Lisbon and Oporto, and about equidistant between the two. Coimbra it is said, can offer no further resistance, and there is little doubt of the junction of the troops under the command of Sandanha, and those under the command of General Stubbs at Oporto.

The Duke of Terceira, with 12,000 men, is pressing the blockade of Santarem. The force of the Miguelites is reduced to a most deplorable situation.

The capture of Leyria has spread great joy through Lisbon—it is consider as decisive of the fate of the nation. Portugal bonds rose in London on the receipt of the news 3 per cent.

PRUSSIA.

BERLIN, 21st January.—It is generally rumored that since the travels of the hereditary prince, he has become strongly inclined in favor of constitutional institutions. There is no doubt that the views of the heir of the throne of Prussia will have a great influnnce over the proceedings of the Congress of Vienna

Later from Cadiz.—The ship *Alciope* has arrived at Boston from Cadiz, whence she sailed on the 7th ultimo. She brings Cadiz papers to the 3d February and Gibralter papers to the 30th January.

A proclnmation was issued by the Governor of Cadiz on the 26th ——, which, after reciting that the night before, the rest of the peaceful inhabitants had been disturbed by parties of men perambulating the streets with musical instruments, and sending forth loud cries, and terrific expressions, which the organs of the law alone have a right to utter—made known his Excellency's willingness to sanction decent diversions on the application of respectable persons who could not answer for the maintenance of order, but at the same time strictly prohibited, and denounced the severest penalties against any one who should, by day or by night, send forth cries calculated to offend others, to disturb public tranquillity, or to reuse the passions of the multitude.

In future, the prisoners taken from the insurgents are to be compelled to serve six years, viz: the non-commissioned officers in the regiments or companies belonging to settlements on the coast of Africa or the Havana, and the privates in the corps stationed in Cuba, Porto Rico, and the Phillippine Islands. As to the leaders of bands, they will, as heretofore, be dealt with according to law.

Correspondence of the Journal of Commerce.

MARACAIBO, Feb. 14, 1834.

Generals Montilla and Oleary, left this place yesterday, in the English man-of-war brig Victor for Jamaica, on their way to England and France, as Commissioners from Venezucla. There is no news of any kind.

SUMMARY.

United States Ship Fairfield.—It appears from a statement in the Norfolk Beacon, that on the night of November 25th, when President Flores recaptured Guayaquil from Gen. Rocafuerte, a boat was sent on shore from the United States Ship Fairfield, then in the harbor, to ascertain the cause of the firing.

About 11 o'clock the boat returned, having been fired into by the troops of Flores; two of the boat's crew were wounded; one of them, *Henry Young*, had six balls in him, two of which were in his head; he died about half an hour after getting on board; the other man, *Wm. Gunnerson*, had two balls thro' his body, and his left arm broken; he was recovering. The Fairfield was at Payta 13th Dec. to sail in ten days for Callao, and thence in a few days for Valparaiso.—All well.

OFFICIAL.—The following statement is from John E. Forrest, Secretary to the Commission under the Convention with France, which accompanies a bill now before Congress:

Statement.—The act establishing the commission required that the Board should assemble on the first Monday in August, 1232; but, in consequence of the short interval of time between its passage and the day fixed for the meeting, only one Commissioner attended on that day, and a full meeting was not effected until the 17th September. At this session the Board passed the necessary orders for the government of the claimants in the preparation of their memorials, and adjourned on the 18th September, to meet on the 17th December.

Second session, commenced 19th December, and continued until the 5th March, 1833. During this session 751 memorials were filed; which being examined and disposed of, and the board having no other business before it, adjourned to meet on the 10th of June following.

Third session, commenced 10th June, and continued until the 13th July. During this session 1,314 memorials were filed; and the board having examined and disposed of them, and there being no other business before it, adjourned to meet on the 21st October.

Forth session, commenced 21st October, and continued until 19th February, 1834. Duriug this session 555 memorials were examined and disposed of, and 230 clams examined, with the proofs filed in support of them.

The whole number of memorials filed, it will be seen, from the foregoing statement, amount to 2,591, and they were disposed of as follows:

1,792 received as sotting forth good claims.
485 suspended for further consideration.
142 not received, for defect of form.
172 rejected.

2,501

[*From the National Gazette.*]

STEAMBOAT WILLIAM PENN.

The undersigned, a Committee of the Board of Directors of the Newcastle and Frenchtown Railroad Company, having examined into the circumstances connected with the destruction by fire of their fine boat William Penn, on the evening of Tuesday, the 4th instant, which was unfortunately attended with the loss of four lives, submit the following as the result of their investigations:

About half past 5 o'clock on the evening aforesaid, the William Penn, on her return from Newcastle, having on board about 150 passengers, and being about one mile this side of Gloucester Point, was discovered to be on fire, the flames bursting out with great violence on the windward side of the boat, outside of the larboard boiler near the after end of it. The committee are satisfied that it was communicated to the wood near the boiler by means of a fissure through the sheet-iron-work of one of the return flues of the furnace which had either escaped the vigilance of the workmen by whom it had been examined two days previously, or which was of still more recent origin. The wood which first became ignited was unusually dry, and therefore burnt with great rapidity, and the combustible nature of the bulkheads, and slight upper deck of the boat, together with a strong westerly wind, aided its progress, so that in a few minutes but little hopes were entertained of being able to save the boat. The efforts of Captain Jeffries and his crew to do so, seem, nevertheless, not to have been abated which the slightest chance of success remained. A hole was cut through the upper deck, and a large quantity of water was thrown on the fire, without producing any sensible effect: the hose was rigged to the forcing pump near the bow of the boat, but so great was the press of passengers in its vicinity, that it could not be worked; and in the meantime the progress of the flames and the alarm had reached such a pitch, that nothing remained to be done but to run the boat ashore, in order to preserve the lives of the individuals on board. The tiller ropes having been burnt, this was promptly effected by means of the starboard engine—when all the passengers (except three, who jumped overboard into deep water and were drowned) were safely landed. The bodies of those who threw themselves into the river, were immediately recovered and conveyed to the city, where every effort was made that medical skill could devise to resuscitate them, but in vain.

One of these unfortunate persons was in the bow of the boat, out of danger, and rushed towards the stern, through the flames to meet his death, by precipitating himself into the water, although begged by Captain Jeffries to remain where he was. The fourth passenger who is deceased was in feeble health, and died the day succeeding the disaster, it is supposed in consequence of having been in the water.

Several horses, a portion of the mails, and the largest part of the baggage, were saved; and no doubt exists in the minds of the Committee that all the passengers might have been rescued without difficulty, but for the panic which is natural, and perhaps unavoidable, on such an occasion. It appears, however, that the greatest presence of mind was preserved by the engineers, firemen, and crew generally, one of whom held up a portion of the bulk head which the fire had forced out, and called to the passengers to go forward, whilst he thus confined the flames and prevented the passage from being interrupted.

As soon as the fire was discovered, the safety-valves were raised, to prevent the additional danger of explosion of the boilers.

Captain Jeffries remained on board, exerting himself to save the property of the passengers after all were out of the boat, and was himself the last person to leave her.

The Committee, in giving these details of the above melancholy disaster, deem it their duty to express their thanks, on behalf of the company, to the master ferryman and the captains and crews of the steam and other ferry boats, both of this city and Camden, as well as to many others, who so promptly repaired to the William Penn, and rendered every assistance which the nature of the case would permit.

The Committee, after a very close investigation, are enabled to state their decided conviction, that the persons already announced as dead are all that lost their lives on this distressing occasion.

On the whole, the Committee consider the fire to have been entirely accidental; and while they are of opinion that it ought to induce additional care on the part of those engaged in steam navigation, they are unable to perceive that any want of prudence or caution can be attributed to Captain Jeffries or the persons employed under him; on the contrary, they deem Captain Jeffries entitled to every confidence, and believe that his conduct in the trying circumstances in which he was placed was deserving of the highest praise.

JAMES LEFEVRE,
S. NEVINS,
WM. D. LEWIS,
WM. J. WATSON,
} Committee.

Philadelphia, March 11, 1834.

Extract from a printed circular of Messrs. Baring, Brothers & Co. of London, dated Jan. 22d.

"There has been some demand for American stocks since the beginning of the month, but at low prices; and the amount of various descriptions in the market being large, we do not look for any improvement, *particularly as the financial difficulties in the U. S. alarm our capitalists.*"

LOWER CANADA.—The address to the King, embodying *ninety two* resolutions, demanding the impeachment of the governor-in-chief, &c. finally passed the assembly on the night of the 1st inst., yeas 43, nays 26. An address to the governor, praying him to transmit the address to the King, was also adopted; and the governor received the assembly with their address on the 4th inst. Mr. Morin had been appointed to go to London, as bearer of the resolutions, and about £300 had been subscribed for that purpose.

To the Editor of the New York American:

Sir—I sincerely hope the Hebrew language will henceforth attract the attention of American ladies as much as it has attracted that of their sex in Europe of late years. The advertisement in your columns leads me to cherish this hope. No one, ignorant of the sacred language, can conceive the exquisite feelings which accompany the reading of it. I can never forget my delight at the sweet simplicity of sch sentences as—"And behold it was very good;" "Fear not Abraham," &c. The awe with which I read those words full of majesty—"Let there be light, and there was light:" nor my wonder when I understood the grammatical meaning of the name of Jehovah. To the refined and pious mind, the reading o the Hebrew Bible is accompanied with pleasure ever new, ever varied, ever thrilling. There, indeed, we drink at—

Siloa's brook that flow'd
Fast by the oracle of God.

Without an intimate acquaintance with Hebrew, we can neither understand many important passages in our Bible, nor feel those many beauties in our own language, which may be called Hebraisms—the incorporating of which, speak so highly in praise of the piety of our forefathers. The illustrious poet of the English language, whom I have just quoted, constantly indulges in these Hebraisms; and his free use of them, has gained for his immortal poem the merit of more *sublimity* than either the Iliad or the Æneid. The female of taste and education, who has spent days of delight over the Paradise Lost, and thinks she appreciates the sublime bard, must learn Hebrew; and then she will confess, that, comparatively speaking, she had really tasted very few of his refined allusions, and those in a very slight degree. How quickly is the poet appreciated by the Hebrew scholar when he reads Milton's *translation* of the word *merachepheth*, in the 2d v. of the 1st chapter of Genesis, as we have it in his invocation:

—— Thou from the first
Wast present; and with mighty wings outspread
Dove-like *sat'st brooding* on the vast abyss,
And *mad'st it pregnant.*

The remark has been made by a truly learned man, that the fate of the English scholar was a hard one; since he could not really be called such till he had attained an acquaintance with Hebrew. Had he known, as well as I do, the facility with which it is acquired, compared with Latin or Greek, he would have blessed the difficulty which he continued to deprecate all his life. SARNIA.

Norfolk *vs.* New York.—The proprietors of the New York and London line of Packets, have recently announced their intention to reduce the freight of tobacco to 25 shillings per hogshead. This is intended to bring shipments of the article from southern ports, and will have a ruinous effect upon the southern lines of Packet. The line established between James river and Liverpool will be rendered wholly useless by the measure, as it cannot afford to carry the article for less than thirty-five shillings per hogshead. This anticipated result has greatly irritated the good people of Norfolk. Their papers contain several fiery protests against it, and some hot-headed simpleton even talks about "a recurrence to first principles." The fact is, that it is vain, in matters of business, to expect men to be guided by a sense of the interests of others. If New York can make money by the new arrangement, the Norfolk line will have to retire before the superior facilities of their northern competitor.

Naval Lyceum.—We published some days ago, the letter of *James Madison*, accepting an honorary membership of this institution. We now have pleasure in publishing the letter of John Quincy Adams.

Commodore Chas. G. Ridgely, New York,
President United States Laval Lyceum:

Washington, Feb. 24, 1834.

Sir:—I have received your letter of the 14th instant, notifying me of the honor done me by the members of the United States Naval Lyceum, in electing me an honorary member of that institution.

I pray you, Sir, to tender to the members of the Lyceum my thanks for this gratifying mark of distinction, and to accept them for the obliging manner in which you have communicated it.

Taught from my infancy to consider the Navy of this Union as our most effective wall of defence; a witness in childhood of that gallantry which, from that day to the present, has so eminently signalized the career of the mariners in her service, I cannot but take pride in finding myself associated with the members of a profession alike adapted to promote the honor of their country in Peace, as to protect her interests in War, and in the pursuit of purposes which may give energy to the practical skill to be displayed on its appropriate element, by investing it with the progressive improvements of science, and the embellishments of literature and the arts.

I am with great respect, Sir, your ob't serv't,
John Quincy Adams.

The Angel appearing to the Shepherds.—We have not yet found a moment ourselves to go and look at this new, and as we hear on all sides, fine picture, by Cole. A friend, however, who has just come from there asks room, which we cheerfully make, for the annexed remarks.

Cole's new Picture.—We visited the Academy in Barclay street in order to see the new production of one so well known to the public. The picture is certainly beautiful, and the subject appears to us for many reasons, admirably adapted to the pencil. It refers to the solemn communication by the Angel to the Shepherds of the advent of Christ, and the promise of peace and good will on earth to man. The Shepherds are watching their flocks on the plains of Bethlehem; the star which led the wise men shines out in bland radiance, over the sacred spot, while on the other side, the Heavens are drawn aside, and the messenger announces to the affrighted herdsmen the tidings of great joy—"Unto you is born this day a Saviour." The lights are well managed, and the repose and stillness of the scene are beautifully pourtrayed. The figure of the elder shepherd is effective, and the gradations of terror and amazement in all three, is happily conceived. The watchfulness of the dog is contrasted with the sleeping of the goat, who, though standing up, is evidently taking his nap.

We think this picture will add to the reputation of Mr. Cole, and we are sure no one will regret having paid it a visit or two."

[*From the Intelligencer of yesterday.*]

The President yesterday *re-nominated* to the Senate the three persons lately rejected as Government Directors of the Bank of the United States. The reasons which he assigned to the Senate for this unusual step, if any, were communicated in confidence, and are of course unknown to us.

Ohio.—The Legislature of this State adjourned on the 3d inst. The Columbus Journal furnishes the following list of monied incorporations created by the Legislature at the recent session:—

Names.	Capital.
Ohio Life Insurance and Trust Company	$2,000,000
Lafayette Bank of Cincinnati	1,000,000
Clinton Bank of Columbus	300,000
Bank of Cleveland	300,000
Bank of Massillon	200,000
Bank of Circleville	200,000
Bank of Wooster	100,000
Bank of Xenia	100,000
Bank of Sandusky	100,000
Bank of New Lisbon	100,000
Total	$4,400,000

[*From the Charleston Courier of March* 3.]

Cotton.—There was less doing in this article than during the previous week, owing, in a great measure, to two or three days of bad weather, and the Races. Holders, however, have remained firm, and former prices were fully maintained.—The late news from Liverpool, received on Saturday, had no visible effect upon the prices in this market—sales having been made after the receipt of these accounts, at about former rates. The total sales of Upland amounted to upwards of 3000 bales, viz:—35 bales at 10 cents—20 at 10¼—50 at 10½—104 at 10¾—332 at 10⅞—376 at 11—260 at 11¼—284 at 11⅜—363 at 11½—67 at 11⅝—80 at 11¾—351 at 12—152 at 12¼—537 at 12½. The transactions in Sea Island and Mains were fair at from 20 to 25 for common, and upwards for finer description. Santees of all description meet with ready sales.

We quote Sea Island and Main, common, 20 at 25; fine do. 26 and upwards; Santees, 18 a 21; Short Staple, inferior to middling, 10 a 10⅞; fair to good, 11 a 11⅞; prime to choice, 12 a 12½.

Rice.—We have no alteration to make in the price of this article. A little more inquiry was experienced for middling qualities, and holders are generally firm. The sales amounted to upwards of 2000 bbls. viz:—197 bbls. at 2¼—264 at 2 3 16—839 at 2¼—231 at 2⅜—176 at 2 16—185 at 2½—130 at 2⅝—150 at 2¾.

New England Banks.—The amount of Country Bank notes exchanged at the Suffolk Bank during the last year, was eight millions of dollars, of $386,000 a day.

[*From the Roseville (Ohio) Telegraph.*]

Indian Hostilities near home.—The following are the incidents of an affray which has produced here considerable excitement:

Mr. L. B. Bartlet, agent of the celebrated Miami chief, Godfrey, passed through this place in company with Poqua, son of Godfrey, on their return from Cincinnati to the residence of the latter near Fort Wayne, Indiana, on Thursday, 7th inst. They stopped at a public House 4 miles west of this. A short time after going to bed, Poqua having gotten up on some false pretext, and provided himself with a dirk from his saddle bags, sounded the accustomed war whoop in the ear of his astonished fellow traveller, and stabbed him through the arm. Both instantly sprang to the floor, and a desperate struggle ensued—the Indian still uttering his fearful yells and occasionally wounded Bartlet. The noise awakened a number of individuals who rushed into the room. Mr. Clendinning, the landlord, entered first, with a candle; this the savage struck out and stabbed M. C. in the chest. Messrs. J. and W. M'Whiney next entered; the former of whom he wounded in the shoulder; the latter, like Achilles, received a stab in the *heel*. A Mr. Hipes next advanced—him he wounded in the arm. The next thrust was at Mr. Bruce, which passed through his clothes. Having lost his dirk accidentally he now commenced with his fists, and soon remained sole master of the room, where he was blockaded until morning, when he quietly gave himself up. He is now in our county jail. No adequate cause for his conduct has been assigned. The manner of the agent, Mr. B., towards him, appears to have been invariably kind, and Poqua has heretofore sustained a high character. It is supposed that none of the wounds are fatal, though Mr. Clendenning and Mr. Bartlet are seriously injured—the latter in five places.

New Orleans 25 Feb.—*A Riot*—On Friday night last a serious disturbance took place anong the Irish laborers employed in digging the upper canal and some of a different section of the country, who were employed in making and repairing the Levees down the coast. It appears that a man named Allahan, had failed to obtain a job of work, and therefore was determined to impede its progress of his successful competitor, and in the course of Friday went down to the Coast with his band to put his threats in execution; finding his party too weak, he said he would fetch a gang that would flog them and left the ground. Late in the night he returned, with a gang from the Canal, and fell upon his opponents, and beat them, and maltreated them most brutally—the result of which was that three of them have died from their bruises, and many more are severely hurt. During Saturday the Police were actively engaged in detecting some of the offenders, and three or four were arrested.—On Saturday night, however, the attack was again resumed, and the attention of the Police was called to a gang of the desperadoes, armed with muskets and fowling pieces, collected on the Gentilly Ridge. They had worried and beaten, so we learn, several negroes on the different plantations. The guard immediately repaired to the spot, when they were met by a discharge of musketry, one ball striking the musket of one of the guard, cutting it asunder and wounding the man. The guard returned the fire and finished by taking 23 of these ruffian pioneers and bringing them to prison, where they are now confined. On Sunday night a party of these same men entered the miserable dwelling of an old woman and her daughtes, and beat them most cruelly, and so they continued their practices until the Police checked them in their murderous career. Parties of three and four of these ruffians, armed, were met by the guard, and arrested, on Sunday night, and conducted to prison. It is really somewhat alarming that these men, disregarding the rights of their fellow men, should thus put a whole community into commotion. Such acts as these can by no means have a beneficial tendency, and the result will be that rather than encourage them at all, other men will obtain a higher price for work, which, perhaps, will not be so well executed. We do sincerely hope that the offenders will be brought to justice, and above all, the leader of this riot, Allaham.

Yesterday an affray took place on the Levee between two boatmen, which terminated in the death of one. The particulars of the quarrel we have not yet learned. The offender was immediately arrested by the police, and is now awaiting his examination before the Mayor.—[New Orleans Mer. Adv.]

The old line of Liverpool packets—the establishment of which all admit to have given the first great impulse to that regularity, despatch and certainty, which now characterize our intercourse with the chief ports of Europe—has recently, as we have before stated, passed into new hands.

Two regulations have been recently introduced, which seem to meet with universal approbation. The one fixing the price of passage at *one hundred and twenty dollars, without liquors*—thus exempting those passengers who do not use them, from contributing to pay for those who do—while to the latter the steward will always be prepared to supply at a fixed rate, such wines &c. as may be desired. The other is, that when the regular day of sailing falls on a Sunday, the vessel will be detained till Monday. This, as a mere matter of business, is a great convenience, as it gives to shippers, the chance of another day's mail to forward the latest accounts to their correspondents; and enables them, moreover, to close their most important letters on the very day of the vessels sailing; which, when that occurred on Sunday could not be. This will be felt by all merchants to be of itself a great advantage.

The line of London packets have, we understand, also adopted these regulations—which, it is reasonable to presume, receiving as they seem to do, the unanimous approbation of the business classes—will be in like manner adopted by the various other lines of European packets.

NAVAL LYCEUM.—Although, amid the mere engrossing topics of the day, little has been lately said in our paper of this excellent institution, it does not, we are glad to find, cease to interest the public. We received, a day or two ago, a fine fruit piece from the Hope gallery, intended for the Lyceum; and now we have pleasure in publishing an excellent letter from JAMES MADISON, accepting an honorary membership in that association.

MONTPELIER, FEBRUARY 20, 1834.

Dear Sir:—I have duly received your letter, notifying the honorary membership conferred on me by the "United States Naval Lyceum, New York." The laudable objects of the Institute, and the names with which mine is associated, give the distinction a value, which claims the special acknowledgments which I beg may be accepted. I must at the same time express my sensibility to the very kind terms in which the communication is made to me, and the gratification I must always feel, in reflecting, that selections made for the Naval Service of the United States, whilst the Executive was in my hands, were so well justified by a brilliancy of career in war, and an honorable usefulness in peace.

Be pleased to accept for yourself my cordial respects and salutations. JAMES MADISON.

Commodore CHARLES G. RIDGELY.

JOHN BREATHITT, Governor of Kentucky, died of consumption, at the seat of Government, Frankfort, on Friday the 21st ult.

On Saturday, James T. Morehead, Esq. Lieut. Governor, was qualified and entered upon the duties of his office as Governor, in consequence of its vacation, by the death of Gov. Breathitt. James Guthrie, Esq. of Louisville, was elected Speaker of the Senate, in the place of the Lieut. Governor.

APPOINTMENTS—FEBRUARY 25, 1834.

By the Governor, with the advice and consent of the Senate.

NEW YORK—David Austin, William G. Bull, Thomas P. Bowne, John J. Bedient, Anthony W. Bleecker, James Bleecker, Jacob Burdett, Wm. J. Brown, Thomas Bell, Joseph W. Corlies, Richard Crawford, John P. Dieterich, Joseph Daymon, Isaac T. Doughty, Wm. H. Franklin, James Gourlay, Wm. Gerard, James N. Gifling, Lindley M. Hoffman, Peter M. Halstead, John Herriman, George Innis, Sidney P Ingraham, Samson M. Isaacs, Elisha Kingsland, Aaron Levey, Richard Lawrence, John Langdon, Gilbert Lewis, Wm. M'Laughlin, Wm. M'Donnell, Wm. D. M'Carty, Rowland R. Minturn, James M. Miller, Robert Charles Morris, Geo. M'Kay Morril, Geo. S. Munn, Aaron B. Nones, Samuel Philips, John Pearson, Thomas W. Pearsall, Lawrence Power, Henry L. Patterson, James C. Smith, Solomon Seixas, Daniel Sparks, Charles B. Spicer, Wm. Timpson, Edward G. Thompson, Abraham Waterhouse, Jacob Van Winkle, and Charles N. Yeoman, auctioneers. Samuel Satterlee, jr. measurer of grain. Judah Hammond, Justice of the marine court. John Wright, Samuel W. Disbrow, Isaac L. Tompkins, Oliver H. Tompkins, Cornelius Timpson, Samuel Clark, John Vredenburgh, Lewis Smith, Jacob Brinckerhoff, J. G Ketchum, Edward Webb, Oliver Holden, Ebenezer Briggs, Joseph Earle, Gilbert Perkins, Jobert T. Clark, and Tobias L. Stoughtenburgh, measurers of grain.

[*From the Journal of Commerce.*]

COUNTRY BANKS.—Through the kindness of a gentleman connected with one of our Banking institutions, we are enabled to lay before our readers a list of those country Banks which redeem their bills at Banks in this city. There are thirteen, of which the bills, *of all denominations*, are redeemable in New-York; and of these, *eight* have assumed this new relation within the last ten days. The names of such are printed in italics. The other five have been long in the habit of redeeming their notes in this city. Of the whole thirteen, all are Safety Fund Banks except two. Seventeen other country Banks redeem their bills, of and above a certain denomination, at the Banks in this city. The annexed schedule gives the particulars:

List of Banks whose Bills are redeemed in New York.

Newberg Bank	*N. Y. State Bank, at Albany*
Brooklyn Bank, L. I.	*Mechanics' and Farmers' Bank, at Albany*
Long Island Bank, Brooklyn	*Catskill Bank*
Dutchess County Bank	*Westchester County Bank*
Hudson River Bank	*Canal Bank, Albany*
Poughkeepsie Bank	*Farmers' Bank, Troy*
Bank of Troy	

Farmers' & Mechanics' Bank, Rahway....5's and upwards
State Bank, Elizabethtown.....5's and upwards
Newark Banking and Insurance Co.....5's and upwards
Trenton Banking Co.....5's and upwards
State Bank, Newark.....5's and upwards
Mechanics' Bank of Newark.....5's and upwards
State Bank, Newbrunswick.....5's and upwards
State Bank, Morristown.....5's and upwards
Commercial Bank, Amboy.....10's and upwards
Belvidere Bank, N. J.....10's and upwards
Orange Bank of Essex.....10's and upwards
Mech. & Merch. Bank, Middlet'n Point...10's and upwards
Bank of Albany.....20's and upwards
Saratoga County Bank.....50's and upwards
Commercial Bank, Albany.....50's and upwards
Lansingburg Bank.....50's and upwards
Troy City Bank.....100's and upwards

Several Banks issue more or less Notes drawn payable in New York.

Disaster at Sea.—The schr. Mary Francis, Capt. B. Kirwan, of East River, which sailed from that place about 15 days ago, bound to the West Indies, returned there last Friday night in distress. She was run foul of, on the night of the 14th, in the latitude of Bermuda, by the ship Triton, bound to Portsmouth, (N. H.) from the South Sea. The ship had all sail set and was going nine or ten knots, and struck the schooner on the starboard quarter, knocked Capt. Kirwan and one of his men overboard; the man was lost, and Captain Kirwan had his right arm and leg broken, and otherwise dreadfully mangled; notwithitanding which he got hold of a rope with his left hand, and held on for half an hour, before his cries were heard, and then there were only two men on board, (the other two having got on board the ship when in contact.) It was two or three hours before the ship got in sail, and returned to the schooner; they lay by her until daylight, when she left her. The schooner is quite new, and is a very strong vessel, consequently did not receive as much damage as might have been expected; she lost three stanchions, the rail waist and part of the taffrail, but does not leak more than she did before the accident.—Capt. Kirwan's sufferings are most excruciating, and if his life is saved, it is feared he will lose his leg. The ship was before the wind, and the schooner was close hauled; they saw each other quarter of an hour before they came in contact, and Captain Kirwan used every exertion to get of the way, but as his vessel was under easy sail, he could not keep clear of the ship. Capt. Kirwan does not know how he got hurt, and has no recollection of any occurrence after the ship struck, and he was twenty yards astern of the vessel with a rope in his hand, and although she was going two or three knots, he contaived to haul himself up with one hand until he reached her before they heard him on board. The Captain of the ship was below. The ship's head and bowsprit were carried away, and part of the head fell on the schooner's deck. The schooner is loaded with flour and corn, belonging to some persons in Fredericksburg; she will repair damages and proceed on her voyage the last of the week, under the command of Capt. Kirwan's son.—[Norfolk Beacon.]

APPOINTMENTS BY THE PRESIDENT,

By and with the advice and consent of the Senate.

John G. Mawney, Surveyor and Inspector, East Greenwich, R. I.

Samuel Brown, Naval Officer, Providence, R. I.

David Henshaw, Collector of Customs, Boston, Mass.

John McNeil, Surveyor and Inspector, for the same port.

George Brent, Collector of Customs, Alexandria, D. C.

(The above are all re-appointments.)

Armsted D. Carey, Receiver at Sparta, Alabama, in place of I. S. Hunter resigned.

James H. Weakley, Surveyor General of Public Lands in Alabama, in place of John Coffee, deceased.

Alexander Hunter, to be Marshal for the district of Columbia, in the the place of Henry Ashton deceased.

Byrd Brandon to be Attorney for the Northern District of Alabama, re-appointed.

Garret D. Wall to be Attorney for the District of New Jersey, re-appointed.

Daniel Kellog to be Attorney for the District of Vermont, re-appointed.

Benjamin F. Linton to be Attorney for the Western District of Louisiana, re-appointed.

David C. Wilson to be Marshal for the District of Delaware, reappointed.

Augustus Jones to be Marshal for the District of Missouri, reappointed.

Heman Lowry to be Marshal for the District of Vermont reappointed.

William Lyon to be Marshal for the Eastern District of Tennessee, reappointed.

John McCalla to be Marshal for the District of Kentucky, reappointed.

Thomas B. Monroe to be Judge for the District of Kentucky in the place of John Boyle, deceased.

The Canals, according to a statement by authority in the Albany Argus, will be open for navigation on the 17th April. The water will be let in, and the whole extent be navigable on the morning of that day.

The Mobile Register of February 22d, says, "The Branch of the United States Bank in that City has resumed the purchase of foreign exchanges. The rates have not come to our knowledge.

The Mechanics' Bank of this city have received funds from the Government, with which to pay those pensioners whom the Bank of the United States have been prohibited, by the Secretary of War, from paying.

THE SILK WORM.—BY MRS. SARAH JANE HALE.

There is no form, upon our earth,
That bears the mighty Maker's seal,
But has some charm—to draw this forth,
We need but hearts to feel.

I saw a fairy young girl—her face
Was sweet as dream of cherish'd friend;
Just at the age when childhood's grace
And maiden softness blend.

A silk worm in her hand she laid,
Nor fear, nor yet disgust was stirred;
But gaily with her charge she play'd
As 'twere a nestling bird.

She raised it to her dimple cheek,
And let it rest and revel there—
O, why for outward beauty seek!
Love makes its favorites fair.

That worm—I should have shrunk, in truth,
To feel the reptile o'er me move,
But loved by innocence and youth,
I deemed it worthy love.

Would we, I thought, the soul imbue,
In early life, with sympathies
For every harmless thing, and view
Such creatures formed to please;

And when with usefulness combined,
Give them our love and gentle care—
O, we might have a world as kind
As God has made it fair!

There is no form upon our earth,
That bears the mighty Maker's seal,
But has some charm—to call it forth,
We need but hearts to feel.

There is good sense and sound argument in the annexed remarks from the Journal of Commerce.

EXCHANGE IN CHINA.—It is mentioned in the letters from Canton, that bills of Exchange drawn by the United States Bank upon their bankers in London, had been sold at the rate of 4s. 4d. per dollar, while there was no sale at all for private bills. The fact is worthy of a moment's consideration, as illustrating the importance of such an institution. The China trade was formerly carried on almost wholly by exporting silver dollars. But within a few years past, the Chinese, perhaps having satisfied themselves with making silver gods, have turned their attention to articles of more substantial importance. They purchase large quantities of British goods, which renders exchange on London as good to them as dollars and better. But at such a distance and under the circumstances which exist, it is impossible to establish private credit firmly enough to sustain so large a business, under all the fluctuations of opinion. Generally to be sure, private bills have been negociated with success, but nothing short of a great national institution has sufficient notoriety and firmness of responsibility to resist the suspicions which occasionally spring up. By means of bills of exchange, our teas and silks from China are paid for by the products of our own soil. For, the bills drawn on London and sold in Canton, are met and paid by funds resulting from sales of Cotton and other articles in the ports of Europe. The great expense and risk of exporting specie is saved, and one cause of fluctuations in the money market avoided. A ship sails to Canton for a cargo of great value, and her whole outward cargo consists of three or four slips of paper, six inches by four. If the whole cargo is lost, every thing is saved.—Pirates may capture it, or the fire burn it, still it is safe, and in possession of the rightful owner.

We know there are some persons who consider credit a dangerous thing. They say it induces over trading, and brings on fluctuations and ruin. If this were ever so true we prefer fluctuations to total inaction. It is better that there should be failures occasionally, and that some individuals should be disappointed in their golden expectations, than that the whole country should lie dormant and stupid. It is better that the nation should march on rapidly in wealth and comfort, though a few individuals may encounter misfortune, and share less than they wished, in the general prosperity.

In the case of the China trade, it is evident that the bills of exchange answer every purpose of specie. The credit is as good as the silver. And the saving of expense enables the people to be furnished with teas and other articles of comfort or luxury, much cheaper than they could otherwise be furnished. Why then should the specie be carried around the world, when credit is the most convenient and economical article. If it were necessary to embarrass enterprize at all, it might better be done in some cheaper way. But no such embarrassments are necessary or proper. It would be as wise to deny to men the use of steam, lest they should drive too furiously, as to deny them the use of credit lest they should overtrade. All that is necessary, is, a steady and wise management, and credit becomes as safe as cash, and steam as safe as the dullest donkey.

SINGULAR OLD SONNET.

The longer life, the more offence;
The more offence, the greater pain;
The greater pain, the less defence;
The less defence, the lesser gain—
The loss of gain long ill doth try.
Wherefore, come, death, and let me die!

The shorter life, less count I find;
The less account, the sooner made;
The count soon made the merrier mind;
The merrier mind doth thought invade—
Short life, in truth, this thing doth try.
Wherefore, come, death, and let me die!

Come, gentle death the ebb of care;
The ebb of care, the flood of life;
The flood of life, the joyful fare;
The joyful fare, the end of strife—
The end of strife, that thing wish I,
Wherefore, come, death, and let me die!

[*From the Boston Atlas.*]

TO A TYRANT—CONTEMPLATING A TRIP TO ARABIA.

Farewell! Go seek the desert sands,
Less barren than thy heart and brain;
And o'er the roving Arab bands,
In absolute dominion reign:
To pity they have steeled their sense,
They thirst for battle and for broil;
Prompt to all deeds of violence,
Eager for blood, and apt for spoil.

There every sight thou seest around,
A mirror of thy mind will be;
And every fierce, tumultuous sound
Will echo thine own thoughts to thee:
Thy present friends would only care
To help thee on a little faster;
Congenial horrors wait thee there,
Congenial souls will call thee MASTER!

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
S1 R J M M & F

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, January 29, 1833.

ALBANY SEED-STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, *warranted* of the best quality.

The greatest care and attention has been bestowed upon the growing and saving of Seeds, and none will be sold at this establishment excepting those raised expressly for it, and by experienced seedsmen; and those kinds imported which cannot be raised to perfection in this country; these are from the best houses in Europe, and may be relied upon as genuine.

It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances, but that satisfaction may be rendered and perfection approximated.

ALSO—French Lucern, White Dutch Clover, White Mulberry Seed, genuine Mangel Wurtzel, Yellow Locust, Ruta Baga, and Field Turnip Seeds, well worth the attention of *Farmers*.
W. THORBURN,
347 N. Market st. (opposite Post Office.)

☞ Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

*** Mr. Thorburn is also Agent for the following publications, to wit:—

NEW YORK FARMER and American Gardener's Magazine.

MECHANICS' MAGAZINE and Register of Inventions & Improvements.

AMERICAN RAILROAD JOURNAL and Advocate of Internal Improvements; and the

NEW-YORK AMERICAN, *Daily, Tri-Weekly*, and *Semi-Weekly*; either or *all* of which may be seen and obtained by those who wish them, by calling at 347 *North Market street, Albany*.

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.
Ja1 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.
HENRY R. CAMPBELL, Eng. Philad., Germant. and Norriet. Railroad
m1 1y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads
No. 264 Elizabeth street, near Bleecker street, New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad, now in operation.
J15 tf

RAILROAD CAR WHEELS, BOXES AND AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.
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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.
JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1832.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone. I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.
B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any person desirous of perusing the same.

[*From the Token for* 1834.]

FLOWERS—BY MRS. SIGOURNEY.

I'll tell thee a story, sweet,
Here under this shady tree;
If thou'lt keep it safe in thy faithful breast,
I'll whisper the whole to thee.

I had a lover, once,
In my early, sunny hours,
A fair and fanciful youth was he,
And he told his love in flowers.

I remember its waking sigh—
We roam'd in a verdant spot,
And he culled for me a cluster bright
Of a purple forget-me-not.

But I was a giddy girl,
So I toss'd it soon away,
And gather'd the daudelion buds,
And the wild grape's gadding spray.

He marked their blended hues,
With a sad and reproachful eye,
For one was the symbol of thoughtless mirth,
And one of coquetry.

Yet he would not be baffled thus,
So he brought for my crystal vase,
The rose geranium's tender bloom,
And the blushing hawthorn's grace.

And a brilliant and fresh bouquet
Of the moss-rose buds he bore—
Whose eloquent brows, with dew-drops pearl'd,
Were rich in the heart's deep lore.

I would not refuse the gift,
Though I knew the spell it wove,
But I gave him back a snow-white bud,
"Too young, too young to love."

Then he proffer'd a myrtle wreath,
With damask roses fair,
And took the liberty—only think—
To arrange it in my hair.

And he press'd in my yielding hand,
The everlasting pea,
Whose questioning lips of perfume breathed
"Wilt thou go, wilt thou go with me?"

Yet we were but children still,
And our love, though it seemed so sweet,
Was well express'd by the types it chose,
For it pass'd away as fleet.

Though he brought the laurus leaf,
That changes but to die,
And the amaranth, and the evergreen,
Yet what did they signify.

Oft o'er his vaunted love
Suspicious moods had power,
So I put a French marigold in his hat,
That gaudy, jealous flower.

But the rootless passion shrank
Like Jonah's gourd away,
Till the shivering ice-plant best might mark
The grades of its chill decay.

And he sail'd o'er the faithless sea,
To a brighter clime than ours—
So it faded that fond and fickle love,
Like its alphabet of flowers.

I'll be a fairy, and drink the dew,
And creep through the honied flowers,
And sleep in the violet's tender blue,
And dance in the evening hours.

My music shall be the soft low gales
Which sigh through the dark green trees,
And heaven's breath swell the gossamer sails
With which I swim the breeze.

The glow-worm shall be my gentle light,
And a lily's cup my bed;
And I'll warm me in the sweet moon-light,
And on fallen roses tread.

And ever fresh the grass shall grow
Around my mystic ring,
And little murmurs, sweet and low,
Shall answer when I sing.

And I will hold a fairy court,
And call each slumbering fay,
And wild and gaily will we sport,
As the twilight fades away.

I'll be a fairy and drink the dew,
And creep through the honied flowers,
And sleep in the violet's tender blue,
And dance in the evening hours.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29tf RM&F

☞ Those papers with which the *American* exchanges, and in which the following advertisements are inserted, will confer a favor on the subscriber by giving the following a few insertions:

Subscribers who are indebted for the *New York American*, the *Railroad Journal*, *Mechanics' Magazine*, or *New York Farmer*, are respectfully requested to remit the amount by merchants, or other gentlemen visiting the city *this spring*, and, if possible, in notes of the United States Bank, or its Branches, as the expense of postage and the discount on notes of distant Banks, is a great tax upon the Office.

VOL. III. OF THE RAILROAD JOURNAL AND ADVOCATE OF INTERNAL IMPROVEMENTS is published once a week in quarto form, with 16 pages to each number, at $3; or in *semi-monthly* form, of 32 pages, stitched in a cover of colored paper, at $4 *per annum, in advance*. The *first* and *second* volumes of the Journal may be had in *two* parts to the year, either stitched in *covers* or bound in boards, at the subscription price, with price of binding, in one part, 50 cents, in two parts $1 per volume. Those in covers may be sent by mail to any part of the country, the same as a magazine. Published at No. 35 Wall st., New-York, by D. K. MINOR, Editor and Proprietor.

THE MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS AND IMPROVEMENTS is now just commencing its *second* year. It will be continued in a manner altogether *superior* to that of the first year. It has drawn forth many valuable correspondents, in different parts of the country, with the assistance of whom, and those who may hereafter contribute to its columns, together with the ability of Mr. JOHN KNIGHT, formerly, and *for several years*, proprietor and publisher of the LONDON MECHANICS' MAGAZINE, who is engaged as Editor, the proprietor has no hesitation in saying that it will be found worthy of an extended circulation and a liberal support. The *first year*, or *two* first volumes, *having been stereotyped*, may now be had either in numbers, or bound in boards—either at *wholesale* or *retail*. Price $1 50 per vol. in numbers, or $1 75 in boards, or $3 per annum. A liberal discount made to the trade. Published by the proprietor, D. K. MINOR, at No. 35 Wall st. N. Y.

THE NEW-YORK FARMER AND AMERICAN GARDENER'S MAGAZINE, has commenced the *second* volume of a *new series*. It is published once a month, in quarto form of 32 pages to each monthly number, at $3 per annum *in advance*. The last volume may be had either stitched in a *cover*, so as to be sent by mail, or in boards. Price, *stitched*, $3 25; in boards, $3 50. *Each subscriber who pays in advance, or previous to the first of April, free of postage or commission, will be entitled to eight additional pages to each monthly number, or* 96 *extra pages to the volume.* Published at No. 35 Wall street, N. Y. D. K. MINOR, Proprietor.

Jan. 22, 1834.

A QUARTERLY JOURNAL OF AGRICULTURE AND MECHANICS will hereafter be published at the same office. Each quarterly number will contain about 300 large *octavo* pages, embracing the most *choice* articles from the best *agricultural* and *mechanical* publications both in America and Europe. It will form 2 volumes to the year, of about 640 pages each, and will be put up like other quarterly publications, so as to be sent by mail. Price, $5 per annum, in advance.

N. B. *A small edition only will be published.*

D. K. Minor also publishes the NEW-YORK AMERICAN, *daily*, *tri-weekly*, and *semi-weekly*.

Also, the PLOUGH-BOY, a cheap agricultural publication, *of eight quarto pages*, is issued once a week, at $1 50 per annum, *in advance*. It contains much interesting reading upon agriculture, &c.

☞ All Letters and Communications for the above publications, may be addressed, *free of postage*, to

D. K. MINOR.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street.

New-York, August 14, 1833.

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 300 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 6 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. S1 R J M M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 69 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J MM &F

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¼ inch, 200 do. 1½ do. ¼ do., 40 do. 1¼ do. ¼ do., 900 do. 2 do. ¼ do., 800 do. do. 2¼ do. ¼ do. soon expected. } *Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2⅛, 2⅜, 2½, 3, 3½, 3¾, and 3½ inches diameter for RailwayCars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. df

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 229 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J28 1am H. BURDEN.